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Some Important Contributions to Medical Science By Military Surgeons*

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Though it is my purpose today to discuss some of the scientific achievements of military surgeons of our own army, it seems to me to be appropriate and that it will add interest to the thesis to speak briefly concerning the historical background of our medical department. It may serve to give you a better appreciation of medical men as a part of our military forces to relate some of their purely military activities.

The history of the medical department of our army is contemporaneous with the assembling of the first troops of the Continental Army at Boston in 1775. In every succeeding development of our country and in every war medical men have taken full share with the troops, either as members of the regular establishment, or of the country's militia or volunteer forces.

The first medical organizations in our army from our present day viewpoint were extremely primitive and defective. Medical officers serving with the troops were appointed by the regimental commanders without much regard to their qualifications. The Congress of Massachusetts on July 1, 1775, prescribed the first medical organization in the army and consisted of three hospitals; one at Watertown, one at Roxbury, and nearby a third hospital for smallpox. This organization consisted of two surgeons and four surgeon's mates per hospital, and one surgeon and two surgeon's mates for each regiment. However, this plan only applied to troops of Massachusetts as they could not make regulations for other states. As the forces from other states came into the conflict the situation soon required a central head, and national or general legislation became necessary. As soon as Washington became Commander-in-Chief in July, 1775, he demanded action at the hands of Congress. Congress complied with his recommendations and appointed one Director General and Chief Physician, and a number of surgeons, apothecaries, surgeon's mates, nurses, laborers, etc. Dr. Benjamin Church was the first medical director. Various changes were made by subsequent acts of the Congress in 1776. In 1777 Congress decreed that there should be one Director General of the Medical Service for the whole country, but prescribed in particular that he should superintend the hospitals situated between the Hudson and Potomac Rivers; a Deputy Director General for the Northern Department, and when circumstances required it one for the Southern Department. The Medical Department was practically disbanded by 1784 except for a small body serving with troops organized to occupy the frontier posts vacated by the British troops. These troops mostly came from Connecticut, New York, New Jersey, and Pennsylvania and furnished their own surgeons and surgeon's mates.

It is worthy of note that many physicians in Revolutionary days did not serve as doctors in that war. Physicians in those

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times took a much larger part in public life than they do now. Many medical men were legislators, judges, governors, or occupied other positions of dignity and distinction. The medical man was more of a publicist and a civil leader than is now the case on the western hemisphere, except in Latin American countries. To cite a few examples of medical men who became distinguished outside of strictly professional lines in the early days of our country:

Samuel Holton, a doctor, was President of Congress in 1780.

Arthur Lee was minister to France in 1776.

John Bartlett cast the first vote for the adoption of the Declaration of Independence and was the first to sign it immediately after the President of Congress. Later he was Chief Justice and then Governor of New Hampshire as well as at one time holding the position of Colonel in the line of the United States Army.

Five of the fifty-six signers of the Declaration of Independence, and twenty-three members of the Provincial Congress of Massachusetts in 1774-75 were medical men. Many served in the line of the army.

Dr. Joseph Warren became a Major General of the Militia and was killed at Bunker Hill.

Oliver Prescott became a Major General. He was the brother of Colonel Prescott of Bunker Hill fame.

John Brooks was a Major General and Governor of Massachusetts.

John Beatty served as a Colonel and later was a member of Congress.

John Thomas became a Major General and followed Montgomery in his fateful expedition to Quebec, and died there of smallpox.

Hugh Mercer was a Brigadier General of the line and was killed at the battle of Princeton as a result of seven bayonet wounds and a blow on the head received in that conflict.

Arthur St. Clair rose to the grade of a Major General.

Edward Hand was a Brigadier General.

Henry Dearborn served as a Colonel in the Continental Army, and later became a Major General.

James McHenry who entered the Revolution as a surgeon, filled the office of Secretary of War during the presidencies of Washington and Adams. Fort McHenry was named in his honor.

Another surgeon in the Revolution was William Eustis who served in the legislature of Massachusetts, was successively a member of Congress, Secretary of War, Minister to Holland, and Governor of Massachusetts. Fort Eustis is named in his honor.

I could give many other examples. Of the 3,500 men who were practicing medicine in the United States at the time of the Revolution only 200 of them actually had medical degrees. One hundred of this latter group actually served in the Revolution.

When war with France was threatened in 1798, 10,000 men were authorized for the army and a Physician General was appointed (Dr. James Craik). In July, 1798, twelve regiments of infantry and one regiment of dragoons were added to the army. As war did not eventuate the troops were mustered out, also all of the medical department except six surgeons and twelve surgeon's mates. There was little provision made for the medical care of troops from 1800 to 1812. During the War of 1812 it became apparent that there must be a responsible head, and Dr. James Tilton was made Physician and Surgeon General in 1813, but no regular or permanent head of the Medical Department was provided until 1818. In 1818 Congress passed a bill providing for a definite medical organization and for the position of The Surgeon General. This bill in addition to The Surgeon General provided for eight surgeons with the compensation of regimental surgeons, and forty-five assistant surgeons. The budget for the whole Medical Department in 1822 was only $34,988.

Joseph Lovell was appointed the first Surgeon General of the Army and served from 1818 until his death in 1836.

Medical officers were first given the right to wear a distinctive uniform in 1812. In 1840 a new uniform was prescribed for the army but medical officers were given only one aiguillette instead of epaulettes as other officers wore. Owing to the vigorous protests of Surgeon General Thomas Lawson this discrimination was changed

and in 1841 they were given the same uniforms as other officers.

There has been no break in the operation of the Medical Department since 1818 and its organization is substantially today what was authorized by Congress at that time.

Medical officers have participated in every war in which the United States has been engaged including the Revolutionary War, the War of 1812, Black Hawk War, Seminole War, Mexican War, Civil War, Indian Wars, Spanish-American War, Philippine Insurrection, Boxer Rebellion in China, and the World War. It should be of particular interest to us to know that during the latter struggle records indicate that three hundred forty-one physicians from Oklahoma served with the colors, and that six of them were killed in action.

I consider that one of the outstanding scientific achievements, as it related directly to the medical care of large bodies of troops, was the work of Surgeon Jonathan Letterman of the Medical Department of the Army during the Civil War. He was the first medical man to organize an effective and complete ambulance and evacuation service for *any army*. This he did when serving as Chief Surgeon of the Army of the Potomac in August, 1862. With two hundred ambulances his evacuation service was first tested in the battle of Antietam in September, 1862. Even then there were no field hospitals, a great necessity. However, he had provided for field hospitals and organized a medical supply service by October, 1862. This complete medical organization was first tested, and very successfully acquitted itself at the battle of Fredericksburg in December, 1862. Letterman's evacuation plan became the model for all other armies, and is still the basis for our modern organization.

I need not go into further details of this outstanding achievement because it probably is within the knowledge of many of you who served with the colors in the Medical Department of the Army during the World War.

Surgeon General W. A. Hammond who served as Surgeon General of the Army in the early part of the Civil War was an outstanding man whose work was never fully appreciated until too late. His amusing and famous "calomel order" was a real advance in the treatment of the sick in those days when it was the practice of physicians to push calomel on all occasions, causing innumerable cases of profuse salivation and mercurial stomatitis and even gangrene. He had calomel, as well as tartar emetic, stricken from the regular supply table. Calomel in those days was regarded almost as a panacea. His order created a storm of protest but the order was sustained. The drug could, of course, still be obtained by special requisition, but it did away with the wholesale use of calomel and no doubt saved much suffering.

It may be of interest to state here that the first use of the Red Cross emblem on the field of battle was during the Civil War. Though the United States government did not formally adhere to the Geneva Convention until after the Civil War, its representatives had participated in the various conferences at Geneva. The Red Cross emblem was first used by the members of the United States Sanitary Commission, during our Civil War. As you all know, the Red Cross took its origin as a result of the efforts of a philanthropic Swiss patriot by name Henri Dunant who, after witnessing the sufferings of the sick and wounded following the battle of Solferino, brought about the meetings and conferences at Geneva which finally lead to the formation of the International Red Cross in 1864. A Greek cross was adopted as the emblem, the colors were made red upon a white background as a compliment to the Swiss nation which was the leader in the formation of this very valuable humane organization.

In the time allotted to me this morning I can not digress longer to cite many other incidents of interest, or many of the acts of individual medical officers that would be worth relating. I would like to be able to quote some of the reports of medical officers during the last century on the treatment of yellow fever, pneumonia, malaria, dysentery, smallpox, etc. With our modern knowledge some of them would be amusing, if not tragic. However, the professional activities of the medical officers of the army reflected the best medical thought of the country and the best medical practice in effect at the time,

as they do today. It may interest some of you to know that even in modern days some of our medical officers became prominent outside of their own line.

General Ainsworth, the founder of the Record and Pension Bureau of the War Department, became its Chief with the rank of Brigadier General. He finally was made The Military Secretary and subsequently Adjutant General of the Army with the rank of Major General.

Leonard Wood, a Captain of the Medical Corps, was made a Colonel of the first volunteer cavalry (the Rough Riders), then a general officer of the line of the army, and once occupied the high office of Chief of Staff of the army. His last public duty was as Governor General of the Philippines and he died while occupying that position in 1927.

The Signal Corps of the Army was founded by a medical officer, Albert J. Meyer, who was a captain in the Medical Corps during the Civil War and became Chief Signal Officer of the Army.

The present Meteorological Service or Weather Bureau of the Department of Agriculture is a continuation of work started by medical officers of our army early in the nineteenth century.

It should also be rememebred that the first branch of the service to have Reserve Officers was the Medical Department. The original Medical Reserve Officers were commissioned in 1908. It was not until eight years later , on June 3, 1916, that the first National Defense Act authorized a Reserve Corps for other branches of the service.

Every physician who prescribes for digestive disorders and every patient who is benefited by such a prescription owes a debt of gratitude to Surgeon William Beaumont of the United States Army, who at old Fort Mackinac on the Island of Mackinac in Michigan in 1825 began his studies of the physiology of digestion which he pursued with patience and skill for many years to the lasting benefit of mankind. His researches on the physiology of digestion covered a period of twelve years.

Harvey Cushing, in speaking of his work calls it "the most important contribution to the physiology of digestion made during the century."

Beaumont's studies were made upon the person of a half-breed known as Alexis St. Martin. St. Martin was accidentally shot in the abdomen on the sixth of June, 1822. He was carefully treated and nursed by Beaumont for nearly two years before he recovered. His recovery left him with a gastric fistula extending through the wall of the abdomen. In other words, Beaumont was able to have direct access through this opening to the stomach of St. Martin, study the gastric secretions and view the contents of the stomach during the process of digestion. In this way he was enabled to write a careful description of the gastric mucosa during life and of the movements of the stomach during and up to the completion of digestion. He described the character and composition of gastric juice and proved that the gastric juices were only secreted when food is present. Thus he foreshadowed the work of Pavloff, and overthrew the doctrine of Magendie that gastric secretion was a continuous process. Out of his own pocket from his slender salary Beaumont largely paid the living expenses of Alexis St. Martin and his numerous family for many years in order to keep him nearby and available for his scientific observations. In 1833 Beaumont published a small book entitled "Experiments and Observations on the Gastric Juice and the Physiology of Digestion." This work was reprinted in German and in French and attracted attention all over the scientific world. It is interesting to note that the great Sir William Osler made an attempt to secure St. Martin's stomach for the Army Medical Museum when that celebrated old man and the father of twenty children died in 1880. However, Osler received a telegram on the death of St. Martin which read, "Don't come for autopsy, will be killed." It is needless to say that Dr. Osler did not proceed any further with his plans to secure St. Martin's stomach.

The William Beaumont General Hospital at El Paso, Texas, is named in memory of this distinguished physiologist.

In 1935 the State of Connecticut opened a new highway which passes through the town of Lebanon, the birthplace of Beaumont, and it has been named the Beaumont Highway.

While the epoch-making discoveries of William Beaumont on the physiology of digestion were and are now well known to all physiologists, the work of the army in connection with the discovery of yellow fever is probably better konwn to any group of modern physicians. The researches of Reed and his co-workers were carried out during the lifetime of many of us here this morning. From the earliest days in the history of our army yellow fever had been a menace to the troops as well as to the civilian population of the country, even as far north as the latitude of Boston. Numerous epidemics of yellow fever occurred in American seaports in the eighteenth century and the beginning of the nineteenth. A most notable epidemic of yellow fever occurred in Philadelphia in 1793 and was graphically described by Benjamin Rush, who at one time served as a Physician General in the Revolution. Even today his report is unsurpassed for realism. The part he played in that epidemic won him a place in the first rank of pioneers of preventive medicine.

From a military standpoint, yellow fever had a marked effect on the "geographic expansion of the United States." In the latter days of the eighteenth century Napoleon sent a large body of troops under his brother-in-law, General LeClerc, to Santo Domingo and Haiti. It was Napoleon's plan that after he had overrun those countries in the West Indies to send his troops on from there and occupy in force the Floridas and the territory of Louisiana on the American continent. However, as a result of yellow fever LeClerc's troops were practically decimated and became so debilitated and reduced in physical and numerical strength that his plans failed and he had to relinquish his intentions regarding the western hemisphere. Therefore, in 1803 Napoleon was very glad to sell to the United States the territory of Louisiana known to us as the famous "Louisiana Purchase" whereby our country acquired a region which now comprises fourteen states of the Union. Had Napoleon's plans been successful in Santo Domingo, France probably would have been able to take, occupy and hold the Spanish owned Floridas and continue to possess the Louisiana territory with adequate forces. We purchased Florida from Spain in 1819. Who can say, therefore, what the effect would have been on the growth and development of our own country? Our own state of Oklahoma is situated in part of the territory thus acquired from France.

The scourge of yellow fever attacked practically every individual exposed to the disease who was not already immune. Millions of dollars were spent by governments on the American continents or accessible by sea to the Americas in endeavors to exclude the disease by expensive quarantine and other prophylactic measures. It was the practice to destroy whole cargoes when ships arrived at any seaboard in an endeavor to exclude the contagion from the country. We find yellow fever first mentioned in a report of The Surgeon General of the Army in 1820. Conditions as to health were deplorable in many Army Stations, but were only a reflection of the conditions also existing in the civilian populations among whom troops were stationed. Thus, at Baton Rouge, Louisiana, during the period 1819 to 1824 twenty-six men out of every one hundred soldiers there for one year's time died. During the Mexican War yellow fever appeared in Vera Cruz shortly after the main body of troops, under General Scott, started inland. New troops which followed them as "replacements" suffered severely before they could reach the high lands in the interior away from the infected area.

The year 1867 stands out in the army as the worst year in which an epidemic of yellow fever occurred. Time will not permit me to go into more details of its extent among troops and the civilian population.

There were many theories as to the cause of yellow fever. However, the first light thrown on the method of transmitting this disease was the theory advanced by Dr. Carlos Finley of Havana in 1881, who read a paper before a medical meeting in Washington in which he asserted that in his opinion the stegomyia mosquito was the intermediate host or transmittor of the disease. His statements, however, were not based upon any successful experiments, but were the result of keen observation and hard-headed logic. He never proved his theory. It is worthy of note in this connection that he advanced his theo-

ry only a year after the great British physician, Sir Patrick Manson, had proven that mosquitoes conveyed the disease known as Filariasis.

In 1897 Sanarelli, the Italian, claimed that he had discovered the specific organism causing the disease. Surgeon General Sternberg delegated Walter Reed and James Carroll of the Medical Corps to investigate Sanarelli's work and they reported that the so-called "bacillus of Sanarelli" belonged to the colon group and did not cause yellow fever; that if found to be present in the bodies of cases of yellow fever it was only there as a secondary invader of little significance.

Early in 1900 General Sternberg detailed a board composed of Major Walter Reed and Assistant Surgeons Carroll, Lazear, and Agramonte of the United States Army to study the infectious diseases of Cuba with special reference to yellow fever. It will be recalled that at that time Cuba was occupied by the United States Army. There were two interesting leads to guide the commission in their work.

In 1897 Sir Ronald Ross of the Indian Army Medical Service had proven that malaria was transmitted by the bite of the Anopheles mosquito. Henry R. Carter of the United States Public Health Service, who studied an epidemic of yellow fever in Mississippi published a report in 1900 and showed that a period of approximately fifteen days had to elapse after the occurrence of a case of yellow fever in a house before others were affected. This again suggested an insect as the vector. Reed's board did two things. First, they proved that the disease could not be carried from a patient to a well person by fomites. A medical officer and three enlisted men for twenty nights slept in a house which was screened so that no mosquitoes had access to them, that was kept at a temperature of about ninety degrees Fahrenheit, and actually occupied beds that were made up with pillow cases, sheets, and blankets soiled by the discharges of patients ill with yellow fever. This experiment was repeated by another group of soldiers. This exploded the theory that the contagium was carried by clothing and bodily secretions and made it possible to save millions of dollars of merchandise and other goods which previously it had been customary to destroy when ships entered a port with yellow fever on board, or arrived from ports in which yellow fever was known to exist. Time will not permit going into more of the details of the experiments of Reed and his co-workers, but suffice it to say that they were successful in absolutely incriminating the mosquito as the agent. They proved that the disease was caused by what was then called the "culex fasciata" later known as the "stegomyia fasciata," and finally now called by its proper name "Aedes aegypti." Further they proved that in order to carry the infection a mosquito had to bite a patient during the first three days of illness, and that afterward a development of the "virus" had to take place in the body of the mosquito for approximately twelve days before it in turn could be capable of transmitting the disease to an uninfected or non-immune person.

Dr. Lazear died as a result of being bitten by one of these insects. Experimenting again Dr. Carroll also contracted the disease but fortunately survived. Fourteen soldiers of our army in Cuba volunteered to be bitten by mosquitoes and contracted the disease. Altogether, during these experiments twenty-eight individuals submitted either to the bite of infected mosquitoes, or to the injection into their own bodies of infected blood taken from yellow fever patients.

Today the West Indies and the North American continent, and the rest of the world except in one or two endemic areas, are free from yellow fever. However, it is now known that the great endemic focus of the disease is on the west coast of Africa. There are also one or two smaller endemic areas in South America. The disease is kept alive among human beings and monkeys and certain other animals by the bites of mosquitoes. It is believed that the original focus of the infection of yellow fever was introduced into the western hemisphere from Africa during the days of the slave trade. During recent years the Rockefeller Foundation has been accumulating evidence which indicates that a number of other mosquitoes are capable of transmitting the disease and that there is probably another animal host besides man and monkeys.

Reed's proof of the method of transmission of yellow fever enabled Gorgas of the Medical Corps of the Army, at that time Chief Health Officer of Havana, to give a practical application to these discoveries and in three months he cleared the city of Havana of yellow fever for the first time in one hundred fifty years. Later Gorgas carried on similar practical measures and by the extermination of mosquitoes, and the screening and isolation of patients succeeded in eradicating yellow fever and greatly reducing the incidence of malaria in Panama. The disastrous efforts of France under DeLessups are matters of history. It is said that every railroad tie put down for the Panama railroad by the French cost a life. Gorgas of the American Army Medical Corps made it possible for Goethals, the great army engineer, to construct the Panama Canal.

Typhoid fever for generations has been the scourge of all armies. While not as spectacular a cause of death as yellow fever, nevertheless, it has led to tremendous disability and mortality. Until 1829 it was confused with malaria and typhus fever. However, in 1829 Louis, a French surgeon, proved that typhoid fever was a separate disease though somewhat like typhus, and, therefore, adopted for it the name "typhoid." The pathology of the disease was first described by Gerhard, an American student of Louis, in 1837, and in 1851, for the first time, we find "typhoid fever" appearing as a separate cause of morbidity in the nomenclature of diseases in the records of the Medical Department of the Army.

We now know that typhoid fever existed in the Continental Army in Cambridge in 1775. The records show that one hundred forty-five men out of every one thousand soldiers were on sick report in 1775, many of whom undoubtedly suffered from typhoid. During the Civil War there were eighty thousand cases of this fever in the Northern Army alone, and thirty-seven per cent of these are reported as having died. While the incidence of typhoid fever fell rapidly in the army following the Civil War, the Spanish American War again furnished a fearful example of the ravages of that disease. Typhoid has always been present among the civil population and whenever new troops were concentrated, coming as they did from civil life or living in communities in which typhoid fever was present, it inevitably resulted in outbreaks among the troops. In the Spanish American War, out of a force of twenty-five thousand men in the Regular Army there were four thousand, one hundred thirty cases of typhoid fever with four hundred fifty-four deaths. The volunteer troops suffered even worse. More than twenty thousand cases occurred in all the American camps out of an army of less than three hundred thousand men, including regulars and volunteers.

A board, of which Walter Reed of the Army Medical Corps was the chairman, and Victor Vaughan and Edmond C. Shakespeare, volunteer medical officers of the army were members, made an exhaustive investigation of the method of transmission of typhoid fever in 1898 and rendered a report which ever since has been regarded as a classic. This was the same Reed who later was the head of the board which studied yellow fever in Cuba. In brief, the board of medical officers proved that while infected water and infected food were great factors, the principal means of carrying the disease from one patient to another in our camps was through the agency of flies, which after having been contaminated by the excreta of patients suffering from typhoid fever, alighted on exposed food in unscreened kitchens and mess halls. In spite of measures to prevent the disease, typhoid fever continued to exist in our army and other armies and among the civilian population.

During the Boer War in South Africa the British Army had thirty-one thousand cases with five thousand eight hundred seventy-seven deaths. In 1896 Sir Almroth Wright of the British Army, after a series of brilliant experiments, succeeded in injecting killed cultures of typhoid bacilli into men without harmful results. In 1897 he published the results of anti-typhoid inoculation which he had carried out on eighteen men who had submitted themselves to him for the purpose. Wright was convinced that it was practicable to develop protection against typhoid fever in non-immunes by the injection of killed cultures of typhoid bacilli. Such cultures, while containing only dead bacilli, still had in solution the toxines or products of

their growth, which when introduced into the bodies of persons would lead to the development of the anti-bodies necessary to render them immune to the disease. In other words, that such persons would be protected to the same extent as would have been the case had they actually suffered from the disease itself. The experience of the British Army during the Boer War with typhoid fever vaccine or prophylaxis was not very encouraging, probably due to skepticism, variations in technique and poor statistical returns. This led to much difference of opinion and caused the practice to be discontinued in the British Army in 1903. The Germans used the prophylaxis in their Colonial Army in German West Africa in 1904-1907. The results with them seemed to be encouraging. However, the results were not convincing for the practice was not continued by the Germans nor taken up by any other army.

In 1908 Captain Frederick F. Russell of the Medical Corps of the United States Army (until recently Director of the International Health Board of the Rockefeller Foundation and now Professor of Preventive medicine at Harvard) was sent to Europe, and studied the methods of so-called typhoid vaccination as developed by the British and the Germans, and also among the civilian population. Upon his return Surgeon General O'Reilly brought together a board of six of the most distinguished physicians of the country with Russell and himself. These men from civil life gave up a week of their valuable time for active duty as members of the Medical Reserve Corps of the Army as a patriotic service, and at considerable personal financial loss, in order to engage in these studies. As a result of their deliberations the board reached the conclusion that vaccination with killed cultures of typhoid bacilli was both useful as a protection against the disease and harmless to the recipient, and recommended that it be introduced into our army as a voluntary measure. Russell commenced his work in the spring of 1909 using officers of the Medical Corps of the Army who volunteered to receive these anti-typhoid or prophylactic injections. It was then introduced among members of what was then called the Hospital Corps of the Army, or enlisted men of the Medical Department, who volunteered to receive it. The results among these officers and enlisted men of the Medical Department led many officers and enlisted men of the line also to volunteer to receive the prophylactic treatment. ("Story re: Company C, Hospital Corps.)

In the spring of 1911 brigade camps were established by the army at San Diego, California, and at Galveston, Texas, and a maneuver division also took the field at San Antonio, Texas. The excellent result of typhoid prophylaxis on a voluntary basis was such that the procedure was made compulsory in the army for all members of the military service under forty-five years of age by a general order published September 11, 1911.

Typhoid fever is a disease of adolescence and rarely occurs among people who are over the age mentioned. The results since typhoid prophylaxis became compulsory in the American army have been amazing. No deaths occurred in the Regular Army from typhoid fever during the years 1913 to 1925, except as noted during the World War in 1917-1918, and yet during that period of time two hundred eighty-six thousand men entered the Regular Army as recruits. In other words they were young men of the most susceptible age. As a result of this work in the army its value was early recognized and put in practice by the civil profession, and in our country at least has largely become a routine measure during the past twenty-five years, except among the very unenlightened or fearful. Every one who has ever seen typhoid, its fatalities, or its sequelae would never hesitate to seek this beneficial treatment for themselves and their families.

During the first year of the World War the British were the only army in Europe who were partially protected and they suffered less than the troops of any other of the allied or central powers at that time. In the French army alone they had forty-five thousand cases of typhoid fever during the year 1914. The German and Austrian armies suffered very heavily with more than sixty-five thousand cases in the German and one hundred twenty-five thousand in the Austrian army. The practice of protecting men against this disease

became more common until the last year of the war all armies required prophylactic vaccination. In our own army which mobilized altogether about four and one-half million men there were only *one thousand five hunderd twenty-nine* cases of typhoid fever with *two hundred twenty-seven* deaths. Had the American army suffered the same proportion of cases of typhoid fever during the World War that it did nineteen years previously during the Spanish American War we would have had six hundred twenty-three thousand six hundred seven cases with sixty-five thousand three hundred thirteen deaths. Another way to put it is to state that for every three hundred eighty-two cases we had in the Spanish American War there was only one in the World War.

At the Army Medical School laboratories constant study is going on concerning the need for changes in the dosage, preparation, and preservation of the typhoid prophylactic vaccine prepared there. While still using the original "Rawlins" strain it is quite probable that a new strain of bacilli will be developed and put in use.

In spite of the efficacy of typhoid prophylactic vaccination we are never justified in relaxing general sanitary measures or precautions for it is fully realized that typhoid prophylaxis will not always afford *complete* protection, particularly so against gigantic doses or virulent foci of infection. Nevertheless, among persons who do contract typhoid fever in spite of prophylactic vaccination, the death rate is practically *nil*. This is one of the greatest achievements in preventive medicine ever made. It stands second only to Reed's work with yellow fever during the present century. Both of these discoveries and their practical application have proved to be indeed a boon to humanity.

I regret that no more time could be devoted to each of these three outstanding accomplishments in medical science—each is fully worthy of separate consideration in longer papers. However, what I have said should serve to remind you that your brothers in the military service have performed and still perform their part in the scientific achievements of our common profession. It has been a pleasure to have had the privilege of participating in this meeting of our State Association.

Relative Importance of Specific Skin Hypersensitivity in Adult Atopic Dermatitis

Marion B. Sulzberger and Joseph Goodman, New York (Journal A. M. A., March 21, 1936), employ the term "atopic dermatitis" in place of any of the older names, such as disseminated neurodermatitis, pruritus with lichenification, prurigo diathesique, flexural eczema, and hay fever eczema. In consideration of the apparently conflicting opinions held, they review their observations in more than fifty cases of typical adult atopic dermatitis, with particular reference to the possible role of the psyche and of the nervous system, which are the two contrasting points of view. In their material they encountered no preponderance of manifest psychic or neurologic disturbances. They have found no proof that "nervousness" is a casual factor in the production of the dermatosis. They gained the impression that these occasional instances of "nervousness" were (1) purely coincidental, (2) concomitant (i. e., psychoneurologic disturbances caused by the same factor or factors producing the dermatologic manifestations) or (3) clearly the comprehensible result of the normal reaction to the dermatosis and its "maddening" itching, loss of sleep, continuous worry about the appearance, and related conditions. The family history, the personal history, the course and the results of investigations and therapy demonstrate that this dermatosis is closely associated with diseases of the atopic group. Specific skin hypersensitivity is in many cases an important factor in the production of atopic dermatitis. There is as yet no convincing evidence that atopic dermatitis can be regularly produced by deliberate exposure to suspected allergens or that the dermatosis can be regularly ameliorated by removal of allergens. While the adduced evidence strongly suggests that atopic dermatitis is due in many cases to specific skin hypersensitivity, unequivocal proof is still lacking.

Transfusion of Cadaver Blood

S. S. Yudin, Moscow, U. S. S. R. (Journal A. M. A., March 21, 1936), states that transfusion of cadaver blood was demonstrated in animal experiments and proved its therapeutic value in a considerable clinical material. Cadaver blood obtained from six to eight hours after death remains sterile and preserves its living properties. The recipient of cadaver blood is afforded ample safeguards by serologic tests of the blood, a bacteriologic checkup as to its sterility, and a careful necropsy. Because of fibrinolysis, blood of individuals dying suddenly remains fluid and can be preserved for more than three weeks. The therapeutic effect of cadaver blood does not differ from that of the blood from living donors. The technic of obtaining blood from a cadaver is simple and does not require any special apparatus. The jugular vein is severed and a glass cannula to which a rubber tube is attached is introduced into eacn end of the vein. The cadaver is then placed in the Trendelenburg position and the blood is allowed to run into a 500 cc. glass flask. The neck of the bottle is stoppered with cotton and the bottle is placed in a refrigerator. Organization of stations for collecting fresh cadaver blood should offer no difficulties in the larger cities, particularly in the large hospitals for emergency cases. The supply could come from traffic accidents as well as from the medical service where deaths from coronary thrombosis and angina pectoris are not rare. The author's experience with cadaver blood transfusions embraces 924 transfusions. Besides, his clinic sent out more than one hundred flasks of cadaver blood to various hospitals and clinics.

The Prevention of Complications of Diabetes Mellitus*

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OKLAHOMA CITY

The treatment of the diabetic patient with insulin and the application of modern dietary principles should reasonably assure the diabetic child of growth and development instead of certain death, offer the adult diabetic an active, useful life rather than one of invalidism and attempt to keep the older diabetic on his own two feet. Accomplishment of these results is not easy. The physician has a great responsibility for the practical diabetic education of the patient and some member of his family but the patient has an even greater responsibility in his willingness to cooperate.

The discovery of insulin by Banting and Best has been the greatest single factor in the reduction of mortality from diabetes mellitus and its complications. Yet, fourteen years later, we still see patients who think that insulin is a habit-forming drug or who report to their doctor's office for each injection; others are not even advised to take insulin although they have had a persistent moderate glycosuria for years on dietary management alone. Insulin should be used in each case when the diabetes is not controlled by a diet sufficient for normal growth and activity. White feels that it should be used in the treatment of every diabetic child.[1]

The paramount problem in the management of the diabetic, reasonably early diagnosed, is the prevention of complications, some of which are certain to occur if the disease is inadequately controlled. Far too numerous are the patients beyond fifty years who develop gangrene or carbuncles because a mild glycosuria, perhaps accidentally found a few years earlier, had been dismissed with a warning to "cut out sugar and starches."

* * *

The discouragement experienced by so many diabetics after learning that they have the disease is difficult to counteract. It often requires much extra time and patience on the part of the physician to convey to such a patient a practical knowledge of the disease itself. But this is absolutely essential in forming the foundation of diabetic education. It leads to the necessary understanding of the common complications and how they may be prevented by constant adherence to management. Without this fundamental knowledge the diabetic will be certain to disregard important points of treatment and will develop preventable complications. Not infrequently he does this even when in full possession of such knowledge. In this event the doctor is not at fault.

> G. H., age six years, had been a known diabetic for ten months and was readily controlled by diet and insulin. In spite of hours of discussion with doctors and dietitian, her parents could not accept the fact that at the present time we have no cure for diabetes. They learned of a chiropractor who could "cure" the disease. After three weeks under his care and without insulin the child developed coma. After the child lapsed into unconsciousness, medical treatment was again sought. The hours of anxiety on the part of the parents until the child improved was a bitter lesson that has served to convince them of the importance of the proper treatment for diabetes.

* * *

The diet must be adequate for the needs of the individual patient.

> The parents of R. L. O., who at fifteen years of age was only fifty-nine inches tall and weighed only seventy-six pounds were worried because he was not growing. Since the development of diabetes at the age of six years, he had

*Read before the Medical Section, Annual Meeting, Oklahome State Medical Association, Enid, April, 1936.

been poorly controlled, never remaining under the care of the same clinic or physician for more than a few months. The parents had so little insight into his management that for the twelve months preceding his first visit to the office, he had been under the care of a naturopath who had agreed to "cure" the disease in two years. Under this treatment the diet had been limited to five per cent and ten per cent vegetables with a little fruit; insulin had been reduced from sixty to fifteen units daily. Subsequently he was placed on a diet including two and one-half grams of protein per kilogram of ideal body weight which in two years has effected a gain of forty pounds and a growth of four inches.

Diabetic dwarfs or psuedodwarfs are less common now than in the pre-insulin era. Priscilla White has clearly shown that normal growth and development may be obtained by allowing adequate protein in the child's diet.[1] The necessity for altering the diet of a diabetic child at least every six months has also been pointed out.

J. K., a youth of nineteen years had been found to have diabetes eight years ago. For five years he had been on a diet of P 55, C 60, and F 145 with forty units of insulin daily. During this period he had consulted a physician only two or three times. His parents worried because he surreptitiously ate pastries and usually showed a heavy glycosuria. After learning from the patient his desire for foods higher in carbohydrate he was placed on a diet of P 70, C 170 and F 70 requiring from fifty to fifty-five units of insulin. On this diet he has felt much more energetic and has broken over less frequently.

There has been in the past few years a definite tendency to increase the carbohydrate and lower the fat in the diabetic diet. Some investigators feel that the higher fats tend to produce a hypercholesteremia contributing to the development of arteriosclerosis.[2] Certainly it is true that the higher carbohydrate diet more closely approaches the normal and is easier to follow. If best results are to be obtained one must, within reason, fit the diet to the individual patient after considering his occupation, the foods obtainable and his likes and dislikes. Although it is ideal for diabetic patients to weigh their food, this is sometimes impractical and even impossible. Measured and approximated diets may contribute largely to successful management whereas insistence upon a weighed diet may mean failure.

* * *

Some person is at fault each time a known diabetic dies of uncomplicated diabetic coma. The patient and some responsible member of his family must be made familiar with the symptoms of early acidosis.

J. McA. developed diabetes in 1930 at the age of twenty-two years During hospitalization he had received instructions to be followed at home His wife who clerked in a department store was not given special instructions and knew little other than that her husband's food should be weighed. After an interval of two years, having consulted his physician one time, the patient felt that special care was no longer necessary. For several weeks he did not follow any dietary regime and took insulin only "now and then." After several days of malaise and indisposition, he developed nausea and vomiting followed in a few hours by unconsciousness. Upon examination two hours later, the air hunger type of respiration suggested the possibility of diabetic coma. After direct questioning, the wife gave the information that her husband was a diabetic but neither of them had any suspicion that the disease might be related to his present illness. Forty units of insulin were given immediately and the patient moved to a hospital where he made an uneventful recovery with adequate treatment for coma.

Deaths from diabetic coma have shown a striking decrease since the widespread use of insulin but the incidence of coma is still disgracefully high. There is almost no excuse for its development in a known diabetic since it is precipitated by too much food, too little insulin or the development of an infection. Appreciation of the fact that infections increase the insulin requirement and the early recogni-

tion of the symptoms and signs of acidosis usually prevent the development of coma. Each hour that elapses after the onset of coma increases the rate of mortality. It is not fully appreciated, even by the medical profession, that the treatment of acidosis is as much of an emergency as the treatment of acute appendicitis.

* * *

The diabetic should understand the beneficial effects of exercise and the possible hypoglycemic effect of over exercise.

E. E., a young man who had been a diabetic for three years became careless. He was taking thirty units of insulin morning and night. One afternoon he played thirty-six holes of golf. Upon returning home, he took his regular evening dose of insulin and ate his usual meal. At eleven o'clock after having retired, he felt so restless that he arose and paced the floor. An hour later his wife awakened to find him in a severe convulsion and unconscious. In the receiving room of St. Anthony Hospital he responded immediately to the injection of glucose intravenously. Now he eats an extra orange or apple before playing golf.

Joslin has well emphasized the importance of the "three steeds—Diet, Insulin and Exercise"—especially in the growing diabetic.[3] He advises almost any form of physical activity except horseback riding and swimming. An unusual amount of exercise, too much insulin or too little food may precipitate hypoglycemia. With a knowledge of the early symptoms, their cause and treatment, the patient can usually prevent a severe reaction. If he is not aware of these facts, his experience may contribute to an unfortunate fear of the use of insulin.

* * *

It is important that a diabetic frequently examine his urine for sugar, but he must not make constant diurnal variations of the diet and insulin dosage as a result of this test without the advice of his physician.

J. B., age twenty-eight, notoriously difficult to keep on constant management, neglected to take his insulin until after a late lunch. Because his urine specimen at that time showed a yellowish brown precipitate he took twenty-four units of insulin instead of the usual fifteen. Two hours later while walking down town, he began to feel weak and stopped in a drug store for some ice cream. Upon continuing his walk the weakness returned and the last thing he remembered was trying to reach the next drug store for orange juice. He became unconscious, fell to the sidewalk and received a laceration of the scalp.

Wide fluctuations of the blood sugar level in the severe diabetic are difficult to control even with the best of cooperation on the part of the patient. A night dose of insulin is often used in an attempt to lower the fasting hyperglycemia. The recent development by Hagedorn and his co-workers[4] of the slower and longer acting Protamine Insulinate has, after clinical experience with it led Joslin to make the statement that we are on the threshold of a new era in the treatment of diabetes mellitus.[5,6] At the present time the preparation is being used only in clinical trial.

* * *

Every diabetic, especially one in middle life, should be carefully instructed as to the measures which may prevent gangrene.

When W. F. S., a farmer, developed diabetes thirteen years ago at the age of fifty-six, he had been placed on a weighed diet and five units of insulin before each meal. For sometime he partially followed the treatment outlined but in the past four years, the diet had been incorrectly approximated and insulin discontinued. Medical advice had not been sought for six years. One week before admission to St. Anthony Hospital he developed a blister on the right great toe which in two or three days became infected. Careful history revealed that for the past two years the sensation in his feet had become diminished and they were cold. During winter nights he had placed a hot water bottle or hot iron to his feet but did not recall having burned them. Examination revealed a fair pulsation of either dorsalis pedis artery. Fortunately the infection readily cleared up under conservative diabetic treatment.

This patient is, however, a candidate for the too common present day complication of diabetes, namely gangrene. Dillon feels that the uncontrolled mild diabetic of middle life who has a slight glycosuria over a period of years is especially prone to develop gangrene. In the majority of cases it may be prevented by adequate treatment of the disease together with very careful observance of the classical instructions laid down by Joslin for the care of the feet.[3] These prophylactic measures deal with cleanliness, aids in the treatment of imperfect circulation of the feet and the avoidance of conditions which might encourage infection by an abrasion of the skin.

* * *

In middle age, diabetes mellitus must be considered in the presence of any infection about the feet.

> Mrs. C. C., aged fifty-seven, developed an infection of the left small toe subsequent to trimming a corn. During two weeks under medical treatment, the toe became gangrenous. She developed unconsciousness and five hours later a urine specimen, examined for the first time during her illness, revealed heavy glucose and acetone. Ten hours after the onset of unconsciousness she was admitted to St. Anthony Hospital in a state of extreme shock with a blood pressure of seventy mm. of mercury systolic and thirty mm. of mercury diastolic. She expired in a few hours in spite of treatment with insulin, fluids and blood transfusion.

Any infection developing in a diabetic demands immediate and constant attention from the standpoint of the diabetic management, as well as the treatment of the infection. Lea A. Riely cared for a diabetic with malta fever whose insulin requirement was raised from thirty to one hundred fifty units daily during the febrile period of the disease.[7]

SUMMARY

Some of the common complications of diabetes mellitus are acidosis and coma, hypoglycemia, infections and gangrene. Their prevention, with the patient under medical supervision, depends upon the cooperation of the patient but only after he has received a thorough and practical diabetic education.

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Multiple Myelomas With Tumor-like Amyloidosis: Clinical and Pathologic Study

A. H. Rosenblum and J. D. Kirshbaum, Chicago (Journal A. M. A., March 21, 1936), report the twelfth case illustrating the formation of amyloid tumors in association with multiple myelomas. A study of the literature indicates that the bone marrow is a frequent site of amyloidosis in cases of multiple myelomas. When present, the amyloid presents itself as isolated infiltrations in the wall of the vessels, as massive accumulations in the form of tumors, and as isolated deposits within the preexisting myelomas. That the bone marrow may be diffusely infiltrated with amyloid unassociated with a pre-existing blastoma has been shown in the cases of Gerber and others. Clinically the authors' case presented practically all the features typical of multiple myelomas, modified to some degree by the presence of the complicating amyloidosis. Vague aches and pains in the joints, spine and chest could be attributed to amyloid infiltrations of the joints and joint spaces, as described by Magnus-Levy. However, these symptoms are often present in the absence of amyloidosis and without roentgen evidence of joint involvement. Symptoms of renal insufficiency, low blood pressure and large amounts of protein in the urine are of common occurrence in both multiple myelomas and amyloid nephrosis. Roentgen evidence, as in this case, is usually most marked in the skull with numerous typical, punched out areas of osteolysis. In other bones there may be a resemblance to a metastatic neoplasm. In most cases there is an increase in the blood proteins, identifiel by Magnus-Levy as euglobulin, which may rise to eight per cent. The renal manifestations of the present case can be attributed, at least in part, to an amyloid nephrosis with a fall in the blood proteins to about half of the normal, due to the large amount of protein lost with the urine. The typical Bence-Jones protein could not be identified. Instead, an atypical proteose was present constantly in the urine in large quantities. It was very similar to the proteose describd in the case of Rosenheim and Wright, and its formation is probably due to the same derangement of protein metabolism that produces the Bence-Jones protein. The congo red test furnished clinically a very valuable aid to the diagnosis of a diffuse amyloidosis, most of the dye having been removed from the blood stream in a short time. Death occurred from renal insufficiency. Interpretation of the roentgen appearance of the bones may become difficult when the myeloma is heavily infiltrated with amyloid, as demonstrated in the roentgenogram of the ribs, and may even take on the appearance of a metastatic osteolytic neoplasm. Biopsies should always be done in such questionable cases to facilitate an accurate diagnosis.

Recent Advances in Deep X-Ray Therapy*

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Since 1931, the use of deep x-ray in cancer therapy has been drastically changed. This is true in the majority, if not all, cases of malignancy. Because of this fact, it is very important that such information should be more quickly brought to the attention of all physicians and not just to those who specialize in therapeutic radiology. The proper handling of, and information given to patients by their family physicians and surgeons where radiotherapy is necessary, is still largely being based on technique given prior to 1931. In the hope that this paper may serve in broadcasting, to a certain extent, present day conceptions of deep x-ray technique, this essay is being presented.

The use of deep x-ray therapy in the treatment of various pathologic processes is relatively new. X-ray was first used in 1896 as a therapeutic agent and since that time tremendous strides have been made in the refinement of x-ray equipment. Moreover, the physics of dosage has been exhaustively studied, affording meticulous precision in intensity and a thorough understanding of the amount of radiation delivered to the surface or to any given depth.

Standardization in dosage also has been enhanced by the development of instruments for measuring x-ray intensity. These dosimeters are constantly being refined to make for greater accuracy. Such an instrument is calibrated on the basis of r units, and this unit has been internationally agreed upon, which enables radiologists the world over to approximate more closely a uniformity of treatment. A brief word of explanation may be apropos: the r unit used in describing dosage intensity cannot be employed alone, as filters and the physical factors employed in the production of x-rays greatly modify the value of the r unit.

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Aside from the physical equipment, many other advances have been achieved. The pathologist has been of extreme value in delving into new methods of grading tumors, as done by Broders. Hence, a better estimate of results to be obtained through radiation is possible as this grading measures, at least to a degree, the radio-sensitivity of the involved tissue. Most experienced radiotherapists now agree that so-called radio-resistant grade I and II growths often respond as well as the grade III and IV growths. The grading, however, is still helpful in indicating the greater or lesser degree of potential metastasis and thereby is of prognostic value. In certain instances, deep x-ray is used as a diagnostic aid. This applies e. g. in certain cases of cervical adenopathy where biopsy is undesirable.

During the years deep x-ray has been in use, the majority of this work has been done using 170 to 200 k.v. Two hundred k.v. is still the accepted standard; however, higher or supervoltage machines have been in use for six to seven years. These are designed to approximate more closely gamma or the more penetrating rays of radium. Such x-ray machines range at various voltage capacities, as 400, 500, 600, 750, 800 and 1000 k.v. The general trend of the literature has been quite encouraging in reference to this supervoltage equipment, but much remains to be learned of its ultimate value. It must be admitted that the greatest difficulty is the large expense of such a machine. Moreover, the housing of this machinery requires an extra large space and usually in a building by itself, or least a wing on a building. The personnel to maintain and run such machinery ads to the cost, makindg it necessary for such equipment to be owned by a well financed or richly endowed institution. Handicapped by this qualification only a few machines in large and greatly scattered cities could be

placed, thus depriving thousands of people the opportunity of being treated.

In addition to the distinct improvement obtained in measuring x-ray dosage and more modern machinery, there is another decided advance. This in reality is the keynote of this paper. This advance is the radical change in dosage, and this change must be stressed. In short, dosage has been tremendously increased. The dosage is ten to twenty times the former amount. Such a measure entails considerable difficulty for both patient and physician, but improved results justify such a change. It would be much easier to continue the old technique and it is a lamentable fact that some physicians have not kept abreast of the times and are still administering obsolete dosage. It is readily understood how such negligence can be overlooked by those who do not closely follow this special line of work, as will be now explained. Unfortunately, a large majority of cancer cases are brought to the radiotherapist in an advanced stage and most of them have a fatal termination. Because of this fact, physicians and surgeons generally have come to look on deep x-ray largely as a matter of palliation and seldom, if ever, a curative agent. Therefore, if the case that is referred to the radiotherapist proceeds to die, it is in direct agreement with what was anticipated. Now, on the contrary, by a refinement in dosage and technique, as is now being carried out by most radiotherapists, a definite increase in the percentage of cures can and is being obtained. This principle of radiation technique was established by Henri Coutard of the Radium Institute of Paris.[1] After reviewing his work and statistics, one can see the injustice of employing obsolete treatment. It is true that there will still be a discouraging number who fail to be cured; however, the decidedly greater number of cured patients makes the increased dosage technique a matter that cannot be denied.

To be more explicit as to the increased dosage, it may be said that Coutard first conceived this idea and put it in practice from 1920 to 1926 and reported a series of five-year cures in 1931 while on a visit to this country. He reported his work again at Zurich on his cases from 1926 to 1933. His work was based on malignancies found in the tonsillar region, pharynx, hypopharynx and larynx. The principle of his treatment was developed on the work of Regaud, another Frenchman, who previously found that the application of radium in daily fractional doses could be administered over a much longer period of time, with a much larger total dosage, and with a definite increase in cancericidal effect without the damage to surrounding normal tissue that had been produced in cases in which the radium was given by one or several massive applications. In plainer terms, this means that patients have to be treated daily for three to five weeks. On his recent visit to this continent and particularly in a speech before the Oklahoma City Clinical Society, Coutard stated that he was more and more favoring the extension of the treatment period to a time covering forty to sixty days. To be sure, such a long period of treatment is very difficult from an economic standpoint for the patient, and also it is hard to make him cooperate. In the treatment of malignancies in areas above mentioned, the patient suffers temporary symptoms in the throat that are quite disturbing and symptoms of the skin that are undesirable in the form of a pronounced radiodermatitis. By extending the treatment period time, these symptoms are less pronounced and less liable to produce permanent sequelae.

The principles of Coutard, *i. e.*, a protracted treatment period, thick filtration of x-rays and large total doses given through multiple portals can and are being used in the treatment of cancer in all localities, instead of just those in the nose, throat and larynx. An understanding of x-ray reactions on the skin is not generally known by most physicians. Skin reactions can vary so much in their significance that much confusion exists. For example, a pronounced dermatitis of the skin produced by thinly filtered x-rays with the total dose being given in a short period of time causes damage to the skin that may be permanent. In contrast, thickly or well filtered x-rays given over a long period of time (that is, in weeks) produces a definite dermatitis that is temporary and will heal. Such reactions as mentioned under the latter circumstances should not be misinterpreted and cause physicians un-

wittingly to make derogatory remarks any more than the scar of an incision from an operation should frighten them.

Since the American College of Surgeons has approved pre-operative radiation in many malignancies, more and more surgeons are becoming interested in treating their cases pre-operatively by deep x-rays. In this connection, more education is necessary to acquaint surgeons with the optimum time following radiotherapy before operation. In most instances a period of one to two months is necessary after the completion of x-rays. This month's variation depends somewhat on the total dose given. In the event it has been very intensive the longer period is necessary in order for the skin reaction to subside and be in good condition for the operation. Not only is there an effect on the cancer cell *per se*, but there is also a definite change in the tumor bed; *i. e.*, the vascular elements and connective tissue supporting the malignant growths. Such a change cannot be thoroughly attained in a period less than about four weeks or more. A knowledge of the effects of radiation on the tissues in question will dispel any fears that might arise in the period between radiation and operation. With such a knowledge being thoroughly understood by all surgeons it will be a much easier task for the radiotherapists to administer the necessary amount of deep x-ray treatment properly instead of a small amount practically of no value as has been the custom in the past.

Another question worthy of discussion is the attitude that physicians take towards their fellow practitioners' work. For example, many adverse criticisms have been offered to the radiologist by the surgeon. Undoubtedly, both groups have made many mistakes and will continue to do so. It is rather easy to see the reason for finding such criticism if one realizes that the surgeon sees the radiologist's failures. However, the radiologist sees the surgeon's failures and could easily form similar opinions, stating unwittingly that surgery in cancer treatment is a failure.

Each physician should take a more philosophical viewpoint and realize that both methods are inadequate, leaving much room for improvement which may be attained by constant research and study. To be sure, unwarranted mistakes, grossly poor judgement and definitely improper technique are inexcusable; however, none of us is so perfect in our work and medicine is such an inexact science that it behooves us to be more kindly and tolerant in our expressions. Such an attitude will work towards a kindlier feeling, greater cooperation and better results in curing the ailments of mankind which is, after all, the result that we as physicians hold paramount.

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Acute, Fatal Coronary Insufficiency

Robert L. Levy and Howard G. Bruenn, New York (Journal A. M. A., March 28, 1936), assert that there is a group of patients with atherosclerosis of the coronary arteries to whom death comes suddenly and in whose coronary vessels, at necropsy, no fresh thrombus is found. The syndrome may be designated "acute, fatal coronary insufficiency." The clinical and pathologic features of twenty-four cases falling into this category have been studied. Records of three hundred fifty-two other cases of coronary sclerosis, with and without thrombosis, have been similarly studied and used as a background for comparison. In approximately twelve per cent of the fatal cases of coronary sclerosis without thrombosis, death occurred suddenly. If thrombosis had occurred, death was sudden in thirty-three per cent. The presence of thrombosis thus almost tripled the likelihood of sudden death. But thrombosis of a coronary artery was rarely if ever the immediate cause of death in these patients. It increased the liability to acute coronary insufficiency by further reducing the functional capacity of an already impaired coronary system. Non-fatal attacks of various sorts in patients with coronary sclerosis may be regarded clinically as intermediate between the ordinary bout of angina pain or its equivalent and a fatal seizure. It is probable that many of these attacks are due to minor degrees of acute coronary insufficiency without occlusion.

Hematuria as a Complication of Pregnancy

Harold L. Morris, Detroit (Journal A. M. A., August 10, 1935), found that in a routine study of one hundred fifty-four urologic consultations because of urinary tract disturbance during pregnancy, hematuria occurred in thirty cases. Further study of these thirty patients revealed cystitis in all cases; pyelitis in twenty-two, of which twenty were bilateral and two were unilateral; hydronephrosis in ten, two of which were bilateral and eight unilateral; pyonephrosis of the right kidney in two cases, and ptosis in nine cases, four being bilateral, four right and one left. Megaloureter occurred in eleven cases, of which four were bilateral, six right and one left. Ureteral calculus of the right ureter was present in two cases, and ureteritis in two cases, one bilateral and one of the right ureter. Hematuria is a grave complication of pregnancy, and in all instances of hematuria occurring during pregnancy the very least the patient is entitled to is a thorough investigation by a competent urologist.

EPIGASTRIC HERNIA*

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An epigastric hernia is usually referred to as occurring in the epigastric region, most generally in the linea alba, between the umbilicus and the ensiform cartilage—or within the space bounded by the xipoid cartilage, the ribs margins and the umbilicus. It is usually caused by the escape of extra peritoneal fat through the interlacing fibers forming the linea alba; "thus dragging behind it a funnel shaped portion of the peritoneum." By intra-abdominal pressure this process may become enlarged to admit considerable omentum—the bowel, or rarely, the stomach—while the greater percentage is usually so small, in size, as to be overlooked or indifferently treated.

HISTORY

In the latter part of the twelfth century, this condition was first described by *Arnold de Villeneuve*. In 1743 *Garengeat* thought this to be the cause of obscure abdominal symptoms. About one year later *Gunz* believed the stomach to be included in the sac of such, and spoke of it as a "gastric hernia" (or gastrocele). *A. G. Richter* (1785) was not impressed with the idea that the stomach was ever involved in the hernia, and reported a number of such cases. It remained for *Maunoir* to perform the first successful operation for relief of this type of case in 1802. However, in 1886 *Terrier's* report of operation was condemned because of danger of peritonitis, which was frequent in previous procedures. Later with the advent of Listerism this prejudice was overcome.

Denk, in 1910, found the omentum with the transverse colon, the stomach wall and appendices epiploicae in one case; adherent omentum in seven; free omentum in five; empty hernial sac in eleven; preperitoneal lipoma and hernial sac in nine; preperitoneal lipoma without sac in six; *Massinger* reported "two cases of simple strangulation; in one case the small intestine was found; in the other, the wall of the stomach." *Gottschlich* had a case in which the stomach was adherent, at one point, to sac of hernia (not strangulated). *Lipkin* reported "strangulated inguinal hernia containing the stomach." *Guttieriz* reported a rupture of the left rectus and consequent hernia containing the stomach.

SYMPTOMS

Blunner states: "The patient is often unaware of the presence of a hernia until it is accidentally discovered, and many years may elapse before symptoms are manifested." However, it is safe to say that different individuals will present entirely different symptoms, in no way commensurable to size of the hernia, as has been previously mentioned. The severity of the symptoms may be increased by exertion, over-eating and so forth, which may give rise to nausea, vomiting, pain in the epigastrium or abdomen. Usually pressure over the suspected area gives tenderness and pain, regardless of the size of the hernia. In small ones, the condition is best observed when the patient is standing; as the contents may slip into the abdomen when the patient is recumbent.

ETIOLOGY

Epigastric hernia may be congenital—due to faulty union of fascia, or acquired—due to trauma, heavy strain, pregnancies, rapid emaciation after obesity, violent exercise and so forth.

FREQUENCY

De Costa states: "Hernia in linea alba includes about one per cent of all cases of hernia"—and occurs in men about four or five times more frequently than in women; also more frequent in those who are engaged in hard manual labor, and between the ages of twenty-two and sixty-two (although they sometimes occur in small children, because the linea alba is quite thin and abnormally wide). This condition frequently causes epigastric or ab-

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

dominal pain, nausea and vomiting after eating a heavy meal, or any unusual effort; but it is seldom ever strangulated. Another interesting feature is that it often occurs with other forms of hernia, femoral, inguinal or umbilical, in the same person.

PATHOLOGY

By fusion of the recti muscle sheaths of the two side the aponeurosis thus formed is called the linea alba; and it is wider above the umbilicus than below. It is perforated by several blood vessels above which forms a weak spot, so that any increased intra-abdominal pressure may enlarge one of these openings to allow passage of any abdominal structures—for instance, extra peritoneal fat, omentum intestine, but seldom the stomach.

TREATMENT

Radical cure, or operative procedure, is by far the most satisfactory—unless definitely contra-indicated by some serious systemic condition. The mechanical treatment, by truss or belt, is usually very unsatisfactory in hernia of the linea alba, because of the pain and discomfort engendered.

In a careful search of all available literature only four strangulated stomachs are reported.

Only two strangulated stomachs through the epigastrium: Massinger's and mine.

Lipkin reports a case of a left inguinal hernia containing the stomach.

Leischner reports one esophageal hernia containing the stomach.

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A CASE

Tessie Howard, negro woman, twenty-eight years of age, married, weight one hundred eighty-five pounds.

Admitted April 19, 1932, at 6:15 p. m.

Dismissed May 5, 1932.

Family History: Negative except father and grandfather had had hernia.

Past History: Childhood diseases, menstruation at fourteen; married, had two children, normal labors. History otherwise negative.

Present Complaints: Began in 1924 as a protrusion (about two inches below the ensiform cartilage). This gradually grew larger, though always reducible, but very painful at times. She also had an umbilical hernia, rather small and present since the children were born; never gave pain or trouble. There is also present a left inguinal hernia which was first noticed about 1929; gradually grew larger but always reducible (is now about the size of a hen egg and very annoying).

Physical Examination: Confirmed above statements. Radical cure was recommended and accepted.

Patient was given saline laxative on evening prior to the operation, was nauseated and vomited some; complained of considerable tenderness in the epigastric region, however no one suspected a strangulation in either hernia until revealed by the operation the next day.

Final Note: Patient was dismissed May 5, 1932 after having made an uneventful recovery from begining to end. All wounds healed by first intention except small liquefying clot in the fat of the inguinal hernia, that drained only four or five days. Three years later the patient is reported to have no return of either hernia.

OPERATING ROOM REPORT

Temperature 98.4; pulse 80; respiration 20; general condition good; morphine, grains one-fourth had been given forty-five minutes before the patient arrived in surgery. Pre-operative diagnosis—epigastric, umbilical and left inguinal hernae.

Anaesthesia: Lumbar two hundred m.g. of novacain given.

Findings: Incision into the sac of the epigastric was made and considerable sero-sanguinous fluid escaped. A knuckle (about the size of fist) of the greater curvature of the stomach was found in the sac and strangulated. Strangulation was relieved, strangulated part was

watched for a few minutes to see if the circulation would recover, then the fascia was plicated with No. 2 twenty-day chromic catgut. The umbilical hernia was repaired through the same opening and in the same manner, using No. 3 twenty-day catgut for the fascia. The skin was closed with dermal, three silk worm stay sutures in-situ. Left inguinal: the usual incision was made, the sac isolated, legated and removed, the stump transplanted upward and inward with a closure of muscles and fascia in the usual manner except No. 3 twenty-day catgut was used instead of No. 2; dermal for the skin closure. Minimum amount of shock and hemorrhage was noted.

LABORATORY REPORT

Urinanalysis: Amber, slightly acid, chemical analysis negative; microscopic analysis, many squamous cells, few pus cells, small amount of mucus.

Wasserman: Negative.

HEMOGRAM

T.W.C.	B.	E.	MY.	J.	ST.	S.	L.	MO.
7,800	0	1	0	0	3	60	31	5

CONVERGENCE INSUFFICIENCY*

DR. A. W. MCALESTER III
KANSAS CITY, MISSOURI

Let us start with considering the frequency of insufficiency of convergence. We find it very rarely under fifteen years of age. Between the ages of fifteen and thirty-five constitute approximately sixty per cent of our cases; from thirty-six to fifty about thirty per cent; beyond fifty, ten per cent; but rarely after sixty. The sex is equally divided. Occupations are not limited; however, it is found mostly in students, clerks, bookkeepers, idle housewives; in other words, eye users who take little physical exercise. Other contributing factors are over-indulgence in alcohol, tobacco, chronic conjunctivitis, endocrine diseases, protracted illnesses, skull injuries, seborrhic blepharo-conjunctivitis and other allied conditions. Sinus infections and faulty illumination are factors.

The anatomical factors that are to be evaluated and are very important are:

1. Mal position of cranial bones and shape of the orbit, i. e., orbits too far apart or not correct in length.
2. Abnormal size of the muscles.
3. Muscles with long and short tendons and anomalies of insertions.
4. Refractive errors.

Another important phase is the physiology of action of the muscles:

1. Abnormal development of the third conguate innervation that is in this condition, poor innervation resulting in reduced muscle tone. The type of innervation is of prime importance as an etiological factor.
2. Hypo-activity of ciliary muscle.
3. Defective fusion. This condition if it exists must be determined at the start as to whether stereoscopic exercises must be given or prisms be used at the out-start of exercises.

The measurements of the convergence powers is next in line and may be briefly considered thus:

1. Measurement of meter angle of convergence is not necessary. When obtained should be at the working distance.
2. Punctium proximum is important.
3. Diplopia with red glass, Maddox rod.
4. The most important is the prism adduction power, and the amount of prism that can be sustained. Also the time of fatigue at from four to eight inches.

It is acknowledged that there are a

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May, 1935.

great many more factors to be considered such as cyclophoria, sensitivity of the different portions of the retina, etc.

The differential diagnosis should not be difficult when a careful history is taken and the adductions and muscle balance is obtained.

SYMPTOMS

The patient usually complains of eyes burning, stinging, and smarting on close work. If the patient does not have the above complaint, it is blurring, great fatigue, or, "I can only do close work for thirty minutes to an hour." Next, there is doubling of print on close work, and lastly headache which is most uncommon, and usually a refractive error is associated with the insufficiency. Vertigo is unusual. The patient rarely complains of any trouble at distance. It has been our experience that when adduction exercise corrects the muscular tone of the internus, the small refractive correction is done away with for most of the close work. Persons who complain of a great deal of afternoon fatigue often have a convergence insufficiency. We took fifty consecutive basals on people who had adductions less than nine degrees and exophoria for near of eight degrees or more, and found forty-two of the fifty to have basals of from minus five to minus thirty. However, B. M. R. is only a laboratory test, and I far prefer the afternoon temperature as compared with the morning taken over a period of a week. The types of employment, endocrine, make up (the latter is very important), and medical history must be dwelt on carefully before the correct complaint of discomfort can be correctly evaluated.

TREATMENT

The treatment of convergence insufficiency: As all such conditions are divided into three classes, medical, orthopic, and surgical. The least resorted to will be considered first and dismissed, that is surgical. The choice of operation is advancement of the internus; in other words, strengthen the weak muscle. Tenotomy of the externus is absolutely worthless; recession is of some value, but much less effective than going after the weak muscle. Medical treatment, in many cases, is absolutely indispensable, as correcting hygenic conditions, habits of life, proper exercises, etc. One of the frequent problems is hypo-thyroidism of mild degree. We often have the patient take the temperature at nine, twelve, three, four, five, six, seven, eight, nine, where a history of fatigue in the afternoon is given or exhaustion on exercise is noted. Thyroid extraction is given from one to four grains per day.

Orthopic or prism training may be divided into three classes; first, prisms incorporated in the glass, base in, which is rather an inexcusable procedure if your study of the patient is complete; it rarely is resorted to. Secondly, if you have a lazy patient you can give a prism in a pair of grab fronts, base out, to put over his spectacles to provide stimulation when he won't take the necessary exercise.

There is a company that produces stereoscopic cards for convergence insufficiency. These are prescribed as base out sets. This set of cards, in our experience, has been of value only in people who have defective fusion. Before exercise prisms are prescribed, the ophthalmologist can take a set of cards such as the Sattler cards, a stereoscope, and get a very efficient kinetic stimulation, also awaking poorly developed fusion. The most efficient method of stimulating the internus is by prisms base out exercise. First, the muscle balance must be obtained, by a perfect maddox rod, at twenty feet and fourteen inches. The aperture of the light must be controlled, near being a pin point, and twenty feet being a one c.m. aperture. Next the adduction power must be obtained by the prisms stimulating contraction of the internus, advancing as far as possible. Where the power of adduction is obtained, at say eighteen degrees, give the patient a fifteen-degree prism and tell him to do the base out exercise fifty times, using a candle at twenty feet, noting the activity of fatigue. Previous to that, have the patient look at a pencil point at eight inches for one minute, to produce fatigue or the symptoms they primarily complained of. Assume patient can only fuse a ten-degree prism, I tell them to take a candle at twenty feet, increasing the prism until they can fuse one twenty degrees, one on each eye. They are then instructed to start doubling twenty degrees and ten

degrees on one eye and twenty degrees on the other, then a twenty-degree and ten-degree on each eye, so on, to a twenty-degree and fifteen degree, and lastly a ten-degree, fifteen-degree, and a twenty-degree, using a rubber band to hold the prisms together. After the patient can fuse two forty-five-degree prisms he is given a card to use for close exercise, from four to twenty inches, in conjunction with the distance. When patients have too little adduction to start at twenty feet we usually start them on the near exercise.

The average patient takes about thirty days, coming in for instruction and observation about every six or seven days. If the muscles haven't the reserve kinetic energy it takes sixty days, and occasionally the patient has to use prisms every day, just as he washes his teeth every morning, incorporating them as part of his daily habits.

Where the interni have their power, and there is a refractive error under a diopter one, as a rule, can do seventy-five per cent of his work without glasses, and many who have over one diopter of hypermetropia, can not only be relieved of their asthenopia of the aforesaid symptoms, but can go several hours a day without their lenses. When the correction of the convergence is made, and the proper instructions are given as to medical care and exercise, with adequate cooperation from the patient, the results are, as a rule, quite gratifying.

Intraspinal (Subarachnoid) Injection of Alcohol for Pain Associated With Malignant Conditions of the Female Genitalia

J. P. Greenhill and Herbert E. Schmitz, Chicago (Journal A. M. A., August 10, 1935), experimented with twenty-seven subarachnoid injections of alcohol in twenty-five women with advanced carcinoma of the genitalia. The authors recommend this procedure in all women who suffer from excruciating and persistent pain that is associated with genital carcinoma. This injection is simple to carry out, it entails very few risks, and it has brought relief to twenty-four out of twenty-five patients. Because it is simpler than any operative procedure and because the results are so satisfactory it is now being used in preference to pelvic sympathectomy, which was advocated two years ago for the same purpose. The authors will resort to sympathectomy in the cases in which alcohol injections fail. Until more is known about the late effects of ninety-five per cent alcohol on the spinal cord itself, it is best to restrict subarachnoid injections to patients in whom the malignant condition is far advanced.

Prevention of Hypochromic Anemia in Pregnancy

John C. Corrigan and Maurice B. Strauss, Boston (Journal A. M. A., March 28, 1936), observed two hundred normal pregnant women who presented themselves for routine care in the antepartum clinic when they were from three to seven months pregnant. Each patient was assigned a number in order. Blood for examination was withdrawn without stasis from an antecubital vein, and a careful history was taken. Every woman was given a bottle containing one hundred coated tablets, with instructions to take one tablet after each meal and to return the bottle and unused tablets at the next visit to the clinic. At all subsequent visits a fresh bottle or one hundred tablets was given the patient. Unknown to her, the number of tablets remaining unused at each visit was counted and from these data the actual amount of medication taken was calculated. Patients who had been assigned odd numbers received tablets containing 0.2 Gm. (three grains) of ferrous sulfate; patients with even numbers received tablets that were identical in appearance and size but contained lactose and no ferrous sulfate. Women who took less than one of the prescribed three tablets daily were excluded from the two series, as were also those in whom sepsis or hemorrhage developed, whether during gestation, parturition or the puerperium. The average daily intake of iron of the treated group was 0.5 Gm. (7½ grains) of ferrous sulfate. At each visit and again one week after parturition, venous blood was withdrawn for examination. Hemoglobin determinations were performed at monthly intervals and one week after delivery by the Sahli method, with tubes so calibrated that one hundred per cent was considered the equivalent of 15.6 Gm. of hemoglobin per hundred cubic centimeters of blood. Red blood cell counts were performed with pipets and counting chambers certified by the U. S. Bureau of Standards. Of the one hundred women given no iron, twenty-four had less than seventy per cent hemoglobin post partum. Of the one hundred women given iron, none had less than seventy per cent hemoglobin post partum. The conclusion is drawn that hypochromic anemia in pregnancy may be largely prevented by the routine administration of iron, especially in the latter months of gestation.

Are There Cyclic Changes in the Human Vaginal Mucosa?

Bernard Zondek and M. Friedmann, Jerusalem, Palestine (Journal A. M. A., March 28, 1936), could not find cyclic changes in the human vaginal mucosa analogous to those of the uterine mucosa. The vaginal mucosa shows different microscopic pictures in different places. In deficient ovarian function (primary amenorrhea) a picture of a mucosa similar to one with good ovarian function is found with even the same changes as in the premenstrual phase. In the absence of ovarian function, by means of ovarian hormones (estrogenic substance, progestin) the authors could produce enlargement of the uterus, a proliferative and a premenstrual uterine mucosa and menstruation, but they could not find analogous changes in the vaginal mucosa. In human beings the infantile vagina may be influenced by estrogenic substance, but it is not certain whether it is because of a specific hormone effect on the vaginal mucosa or on the mucous membranes in general. Since the vagina is developed embryologically different in different species, the different reaction of the vaginal mucosa is explainable.

An Improved Anesthetic Technique For General Surgery

Abstract of an article by Drs. W. A. Fraser and J. T. Gwathney, Surgery, Gynecology and Obstetrics, 62:236-237, February 1, 1933:

In this study, various combinations of analgesic and anesthetic drugs were used with a view of attempting to improve on the present surgical technique, first, by abolishing psychic influence before operation; second, by securing a better brain block and greater relaxation during operation; and third, by diminishing gas and wound pain after operation. The procedure as evolved was carried on more or less completely in over 300 patients.

The final technique is to give a dose of a barbiturate about two hours before the operation, then one hour before the operation inject intramuscularly 1/48 grain of Dilaudid in two cc. of a twenty-five per cent solution of magnesium sulphate, repeating in fifteen minutes. After the second dose the patient is turned on the left side and a retention enema of ether 2½ ounces, olive oil 1½ ounces, and chlorbutanol 10 grains is given. Up until this time no expert attention is necessary and this quiet sleep is converted into surgical anesthesia and relaxation. with an open mask, nitrous oxide (or ethylene) and oxygen being used —fifteen per cent to fifty percent to which a five per cent vapor of ether may be added, if necessary.

The physiological balance between respiration and circulation is retained, with respiratory and circulatory rate normal. The patient is in good condition at all times and relaxation is only second to that obtained by spinal and, in some cases, was equally as good. The long, quiet sleep after the operation is restful and life-saving, enabling the tissues to resume their normal relationship without painful reaction. With this method and technique, the convalescence of the patient starts on the operating table and this is as it should be.

The synergism of magnesium sulphate with Dilaudid is even more striking than with morphine. The dosage of Dilaudid was decreased and its effect was prolonged and in a vast majority of cases patients awoke without pain, nausea or vomiting. Ether vomiting is a thing of the past.

In conclusion, the authors state:

"1. A definite prolongation of the effect of Dilaudid is made by the addition of a twenty-five per cent solution of magnesium sulphate.

"2. The small amount of ether counteracts the depressing effect of Dilaudid magnesium solution on the respiratory center.

"3. A comfortable relaxation with less shock and greater post-operative comfort occurs with this technique than with any procedure heretofore used."

Complete information on Dilaudid can be obtained from the Bilhuber-Knoll Corp., Jersey City, New Jersey.

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Addison's Disease Following Adrenal Denervation in a Case of Diabetes Mellitus

J. M. Rogoff, Chicago (Journal A. M. A., January 25, 1936), cites a case in which an attempt had been made to benefit a diabetic patient by denervating the adrenals. Addison's disease developed. The history indicates that this syndrome was superimposed on preexisting diabetes by surgical intervention with the adrenals. The surgical manipulations apparently resulted in occlusion of blood vessels and degeneration of the adrenal cortex. Of course the coexistence of diabetes may be assumed to have been unfavorable for possible regeneration of the damaged adrenal cortex. The patient was in a subacute condition of adrenal cortical insufficiency when seen May 12. At that time it appeared that he would survive probably not more than about six months. He died October 18. This prognosis was based on the existing evidence of advanced adrenal cortical insufficiency, indicating extensive and progressive degeneration of the glands. The development of ebony colored small spots in a patient with Addison's disease is associated with irreparable damage to the cortex of the adrenals. The gravity of the condition was indicated further by the repeated exacerbations and by evidence of progressive adrenal degeneration as interpreted from the costolumbar pressure reaction. The presence of this sign in Addison's disease may be interpreted as evidence of active inflammatory or degenerative processes in the gland. The case illustrates the serious danger of attempting adrenal surgery for the correction of various ailments supposedly related with disturbed adrenal function. Such supposed relations are entirely hypothetical and are not supported by tenable evidence. At any rate, the surgical procedures that have been employed should not be expected to be of permanent benefit, since denervation of the gland by section of its nerves is usually followed by regeneration of the nerve supply within a few weeks. Excision of one gland, as has sometimes been attempted, is subject to the same criticism, and is to be deprecated. The very fact that it is alleged to be of benefit in so great a variety of diseases ought to render the practice suspect.

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Dinitrophenol Poisoning With Thrombocytopenia, Granulopenia, Anemia and Purpura Complicated by Lung Abscess

Stanley W. Imerman and Carlyle P. Imerman, Hollywood, Calif. (Journal A. M. A., March 28, 1936), present two additional cases because of several unusual features that were observed for the first time following dinitrophenol; namely, anemia, thrombocytopenia, purpura and lung abscess. Cases of diffuse bone marrow depression following the use of dinitrophenol have not been reported, despite the close relationship of this drug to benzene. Their case one illustrates the diffuse nature of the bone marrow depression as evidenced by anemia, thrombocytopenia, leukopenia and granulopenia. Their case two reveals the selective damage to the bone marrow as shown by the normal hemoglobin and red blood cell count, thrombocytopenia, leukopenia and granulopenia. The average red blood cell lives in the peripheral circulation from fourteen to thirty days or more; the length of life of the mature neutrophil that reaches the blood stream is from one to six days. It is obvious then that one should take complete blood and platelet counts for at least two to four weeks on all patients in whom a general bone marrow depression may be suspected, and in some cases, as shown by case one, blood counts should be taken for several months, as there may be some permanent damage to the erythroblastic tissues of the bone marrow. It might be advisable therefore to institute iron therapy as a prophylactic measure in these cases, before the onset of the anemia The relationship between lung abscess in case one and dinitrophenol cannot be established from one case but should be borne in mind as a possible untoward effect of this drug. There is no known specific chemical antidote for dinitrophenol. In view of the rapidly increasing number of untoward effects of this drug, as well as the convincing comprehensive report of the Council on Pharmacy and Chemistry for not accepting this drug in New and Nonofficial Remedies, physicians should make every effort to discourage its use.

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McAlester, Oklahoma

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

ANNOUNCEMENT OF THE LEGISLATIVE COMMITTEE

At the meeting of the House of Delegates in Enid, April 7, it was unanimously and enthusiastically voted to double the dues of the members of the State Association for the next year. But owing to the fact that this money would not be available until January of next year, it was likewise unanimously and just as enthusiastically voted that each county be requested to contribute a sum equivalent to ten dollars per capita for its members in the association.

They realize that it might be a hardship on some men to pay ten dollars, but at the same time realize that there would be one or more men in each county who could pay more than the ten dollars, and thereby raise the required fund.

This fund is to be for the maintenance of an all time office in Oklahoma City, manned by an efficient executive secretary and a competent stenographer, to help us by organization to bring about many things that are sorely needed by the public as well as the profession.

We, your committe on legislation, sincerely hope that when this call is made upon the various societies for funds, that they will graciously and promptly respond.

This fund will be kept separately in the hands of the State Secretary, Dr. L. S. Willour. And will be spent by and with the counsel of your entire legislative committee (which is composed of Dr. George R. Osborn, President; Dr. Sam McKeel, President-Elect; Dr. McLain Rogers, Member; Dr. C. B. Barker, Member; and Dr. H. K. Speed, Chairman), for the good of the profession all over the state and the good of the general public in an unselfish and proper manner.

PHYSICIANS SHOULD PLAN BOTH WORK AND RECREATION

To take advantage of every opportunity for improvement professionally is very necessary for any physician who hopes to make a success of the practice of medicine. Who does not agree? This is not all. A sound body with some energy reserve is equally important. I am writing this as a result of my observation of doctors with whom I have been associated, who had irregular habits as to eating and sleeping, who took little or no recreation and rarely took a vacation. This is not right as they cannot enjoy participation in the normal family activities and seriously upsets the routine so necessary to normal living.

No physician needs to be so busy that he cannot develop a program of living whereby he can have meals at regular hours and sufficient sleep to conserve his strength for his daily task. Emergencies alone will make exceptions to this program necessary. Poor planning and wasted time are the cause of most irregularities in the physician's life and as a result of

this very thing he is an old man before his day.

My appeal is for regularity of habits, time to be taken for recreation, an annual vacation, some fellowship with other people, a little bit of life as he travels on his way, some time for his family and some time for his church and civic activities.

All these things with the proper amount of study and work will make, I believe, not only a better doctor but a better citizen.

PROMOTING THE CAUSE OF THE MEDICAL PROFESSION EACH MEMBER'S OBLIGATION

"The most encouraging aspect of national affairs in the last few weeks, to be sure, has been the awakening currents of public opinion that have pressed themselves upon Congreess and produced some modification of clumsily worded, radical and well-nigh confiscatory legislation."

This significant statement in David Lawrence's column in the *United Daily News* may well be taken as a text for a reiteration of appeals to the members of the medical profession to use their individual influence to spread the physician's viewpoint on social and economic questions.

Lay reformers are working diligently, at a most propitious time, to arouse public support for their pet schemes for socializing the medical profession and other groups.

The American Medical Association and the various state associations are using every means at their command to enlighten and protect the public and the profession.

Their most powerful weapon is the influence of the physician in the community which he has continued to serve through every period of economic distress. For that sacrificial devotion to his calling, his standing is generally respected and his judgment accepted with confidence.

With the community looking to him for advice and leadership in matters affecting medical practice and public health, the physician very properly, and as the opportunity is presented, can counteract the effect of propaganda which is threatening the very existence of the practice of medicine as a profession.

Here is an opportunity for *preventive medicine.*

Whole-hearted participation in the activities of medical organizations must be supplemented by militant effort on the part of the individual physicians, in order to *prevent* the eventual capitulation of the private practitioner.—*Ohio State Medical Journal* (December 1, 1935).

Editorial Notes—Personal and General

DR. R. B. FORD, Holdenville, has returned from Vienna and Berlin where he has been taking post graduate courses for the past two months.

DR. J. H. PLUNKETT, Wagoner, is taking post graduate work in Nashville, Tennessee.

DR. R. M. SHEPARD, Tulsa, President of the Oklahoma Tubercular and Health Association, attended the National Tubercular Association, at New Orleans, in April.

DR. L. J. MOORMAN, Oklahoma City, appeared on the program of the National Tubercular Association which met in New Orleans in April.

DR. and MRS. WILL C. WAIT, Clinton, left April 28th for a two weeks vacation in Kentucky and Kansas City, where it was their privilege to witness that great American classic of the turf, the Kentucky Derby. They also attended a meeting of the American Medical Association and the Federation of Sanatoria both of which were held in Kansas City. Dr. and Mrs. Wait also visited the Waverly Hills Sanatorium and by combining pleasure with the many professional aspects of the trip, enjoyed a timely vacation.

Goiter Meeting in Chicago in June

The American Association for the Study of Goiter will meet in Chicago, June 8-9-10. The tentative program is very interesting and we will recommend to those interested in goiter that they attend this meeting where they will receive a program well worth while.

Golf and Infant Feeding

It is possible to play over the entire course with a single club and bring in a fair score. But playing with only one club is a handicap. The best scores are made when the player carefully studies each shot, determining in advance how he is going to make it, and selecting from his bag the particular club best adapted to execute that shot.

For many years, Mead Johnson & Company have offered "matched clubs," so to speak, best adapted to meet the individual requirements of the individual baby. We believe this to be a more intelligent approach than the use of a single "baby food" to meet the many situations presented by many babies. "There is no average baby."

RESOLUTIONS

DEAN COPPER WIDENER

Dr. Dean Copper Widener died in Okmulgee City Hospital March 23rd, 1936, after a short illness. He was born at Lathrop, Mo., February 19th, 1896, and came to Okmulgee with his parents when a small boy. He received his preliminary education in the city schools of Okmulgee, and at Swarthmore College. After serving as Lieutenant during the World War, he attended Johns Hopkins University, and received his degree as Doctor of Medicine there in 1925, specializing in pediatrics. After serving one year as interne at Harriet Lane Hospital, New Haven, Conn., and another at Johns Hopkins, he returned to Okmulgee and engaged in the practice of his profession until his death. Interment was in the Okmulgee cemetery. Dr. Widener is survived by his wife, Esther Kinsey Widener.

Dr. Widener was unexcelled as a pediatrician, and won marked recognition in that field.

Your committee, having been closely associated with him in his profession, especially feels his loss, and submits the folowing resolution to be placed in the records of the Okmulgee County Medical Society; a copy sent to his wife; and one to the Oklahoma State Medical Journal for publication:

"WHEREAS, by the passing of Doctor Dean Copper Widener, the entire medical profession, the community at large, and especially the mothers and children have suffered a great loss, and ther has been left vacant a place that cannot be filled, not only in the profession, but in the hearts of all who knew him,

THEREFORE, BE IT RESOLVED, that, realizing the full measure of the loss occasioned by the death of Dean Copper Widener, who ministered kindly, gently, and faithfully to the needs of the children, and devoted his time and skill to their care and development, this Society extend our sincere sympathy to his wife, and adopt this resolution as an expression of our and our deep regret at his death."
appreciation of him as a physician and friend,

M. D. Carnell,
E. D. Rodda,
Harvey O. Randel,
Committee.

DOCTOR WILLIE McCLURE LESLIE

WHEREAS, on March 25, 1936, our friend and co-worker departed this life by reason of a streptococcic infection of the throat and septicemia contracted in the pursuit of his life's work, namely, the amelioration of sufering and death;

AND WHEREAS, we the members of the Kay County Medical Society, knowing his unfailing application to the task to which he set his hand after graduation from Baylor University in 1916;

AND WHEREAS we being constantly associated with him and being fully aware of his constancy of purpose in his life's work, the relief of suffering, unmindful of his own well being or financial gain:

BE IT RESOLVED, that this Society hold of record this expression of deepest sympathy to those from whom he so untimely departed, and a deep feeling of regret in his unfinished work—the relief of the ill, the council of the bereaved and the unfailing sympathy of a truly benevolent heart;

BE IT THEREFORE RESOLVED, that a copy of this sentiment be sent his family and be set forth in the minutes of our Society, and a copy be sent The Journal of the State Medical Association.

A. S. NUCKOLS, President,
Kay County Medical Society.

Designed Solely for Infant Feeding

S. M. A. is an adaptation to breast milk, designed solely for infant feeding, instead of for use in coffee and in miscellaneous other ways.

The similarity of S. M. A. to human breast milk makes it easy to start the infant on supplementary feedings of S. M. A., gradually shifting over to complete feeding of S. M. A.

The physician finds S. M. A. simple to prescribe and the mother gratefully finds it simple to prepare. The antirachitic factor is included and there is no extra vitamin D to buy. The liberal provision of vitamin A activity is constant and uniform in S. M. A. throughout all seasons of the year, whereas this factor is variable in cows' milk.

Treatment of Early Syphilis

Oliver S. Ormsby, Chicago (Journal A. M. A., Aprill 11, 1936), states that with modern methods of treatment, early syphilis can be eradicated in the majority of cases. Continuous treatment with no rest periods gives the best results. Alternate courses of arsphenamine and bismuth are recommended covering a period of at least eighteen months and employing a minimum of twenty injections of old orsphenomine or its equivalent with other arsphenamines. The Wassermann reaction is usually reversed by the end of the first period and should remain so permanently. The early reversal of this reaction indicates proper progress of treatment, but by no means does it relieve the physician of carrying out the outlined schedule. An adequate amount of arsphenamine is absolutely esential and nothing save intolerance should reduce this. A standardized method of treatment for large numbers of patients is justifiable for the reason that this early group includes chiefly young, otherwise healthy patients who tolerate much treatment with safety, and also because it is at this time that such treatment offers the best chance for eradication of the disease. With the efficient drugs available, treatment should be instituted at the earliest possible moment; i. e., when a diagnosis has been made either by the demonstration of Spirochaeta pallida or by a positive Wassermann reaction or definite clinical evidence. If started early before the natural defense mechanism has had time to function, the necessity of continuous vigorous treatment is imperative. By any of the modern schemes of treatment the Wassermann reaction becomes negative and all signs of the disease have disappeared by the end of the first course. If at this time a lapse of treatment occurs, either voluntarily or through some neglect by the patient himself, disastrous developments may occur such as neurorecurrences or other relapses, so that it is of the utmost importance that no interruption in the treatment be allowed under any circumstances. If the Wassermann reaction remainns positive after the first period in spite of continuous treatment or if a Wassermann relapse occurs, examination of the spinal fluid is indicated.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

INTERNAL MEDICINE

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By HUGH JETER, M.D.

Diseases of Metabolism and Nutrition. Review of Certain Recent Contributions. Russel M. Wilder, Ph.D., M.D. Dwight M. Wilbur, M.D. 1. Diseases of Metabolism, Dr. Wilder.

This is a review of recent investigations pertaining to metabolism and nutrition.

DIABETES MELLITUS

Hagedorn, in Copenhagen, Denmark, has prepared a compound of protamine from salmon sperm and insulin which by virtue of a slow liberation of insulin gives a prolongation of the insulin effect. This avoids fluctuation of blood sugar values and according to Dr. Elliott P. Joslin in the new edition of "The Treatment of Diabetes Mellitus," a great achievement has been made.

This fifth edition by Joslin is reported to be a classic heretofore unequalled. A few other high lights in this text are:

"In the year 1934 with 1,396,903 total deaths were 28,000 deaths with (not of) diabetes, a rate per 100,000 population of 22.1 per cent, a ratio of diabetic total deaths of 2.0."

"Diabetes is now the tenth disease and has advanced to this place from the twenty-seventh place in 1900."

"One Jew in nine Jews between the ages of fifty-five and sixty-four years died with diabetes in New York City."

"The average age in the Naunyn era, ending about thirty years ago and the Banting era, including the past thirty years, has risen from 44.5 to 62.8 years."

Exercise is increasingly helpful but one must have insulin and then exercise."

"At the New England Deaconess Hospital since 1919, eighteen per cent of the one hundred ninety-six diabetic autopsies performed had purulent infection of the urinary tract."

"Eight hundred thirty-nine diabetic children of whom seven hundred sixty-nine developed after August 7, 1922 and seventy had been seen earlier than that date, showed eighty-nine per cent survival."

He does not believe there are any cures among children.

SUGGESTIONS ON THERAPY

Antidiabetic extracts of the mucosa of duodenum have been thoroughly studied. Many investigators have "fallen into this trap." They forget that it is characteristic of diabetes to show a remission during the first year or two under any kind of management and that the value of a new form of treatment must be proven with cases of long duration. This criticism is not to be discrediting. The results with patients are encouraging and the observations in the laboratories are full of promise. A serious difficulty has been encountered in the preparation of the extracts. Some have been active and others inactive.

VITAMINES

The study of vitamines has become very prominent in connection with the treatment of diabetes but a review of his work which is apparently quite exhaustive, fails to reveal any convincing evidence of the value of such therapy.

IRRADIATION OF THE PITUITARY GLAND

This has been tried by Soskin, Mirsky, Zimmerman and Crohn but without encouraging results.

EFFECTS OF SALTS OF SODIUM AND POTASSIUM IN CARBOHYDYRATE METABOLISM

Schenck, Glass, Beiless, McQuarrie, Thompson, Anderson and McLean studied diabetic treatment by the injection of sodium chloride intravenously. Most of these reports indicate that there is some value in the administration of sodium chloride both by mouth and intravenously and the author of this article states that he has repeatedly seen a favorable and lasting effect on patients who are insensitive to insulin because of infections or other complications.

High values for potassium are found in blood serum in untreated cases of diabetes mellitus and study seems to indicate that potassium salts are contra-indicated.

DIABETIC DIETS

Considerable work is reviewed in connection with the high-carbohydrate low-fat tendency in diabetic diets and considerable controversy continues to exist in conection with actual organic changes in diabetic patients treated on low-carbohydrate diets versus those treated on high-fat diets.

Duff of Johns Hopkins claims after considerable study with animals that the production of arteriosclerosis by feeding a high-fat diet is not identical anatomically with that of arteriosclerosis in man. The lesion in the rabbit involves the media primarily and the intima is affected by the disease in man.

He contends that finally those pathological conditions in man which are associated with cholesteremia with the one exception, diabetes, are infrequently associated with arteriosclerosis. Duff refers to pregnancy, hypothyroidism obstructive jaundice, certain types of nephritis and lipoid nephrosis. These negative observations in patients with outspoken hypercholesteremia constitute the strongest sort of evidence against the idea that hypercholesteremia acting alone can cause arteriosclerosis.

In this connection Lieb reports extensive clinical and laboratory studies on Vilhjalmur Stephansson, the arctic explorer, whose diet consisted ex-

clusively of meat. Examinations revealed no significant abnormalities.

In the Medizinsche Klinik, Falta of Vienna reported an interesting questionnaire on diabetes. Questions were sent to clinicians and their replies in answer to pertinent questions regarding the management of diabetes mellitus vary widely.

The theory of diabetes is summarized and a report of some interesting work by eminent physiologists and investigators is mentioned.

A report of EYE COMPLICATIONS is made.

THE TREATMENT OF THINNESS WITH INSULIN

Many reports are reviewed but there is some disagreement as to results.

The psychic element is found by many to be a factor. Administration of insulin was used by others who advocate this treatment even tho there may be a psychic element. Large doses up to sixty-four units daily are used.

DIABETES INSIPIDUS

The injection of a solution of posterior pituitary has been proven to control the symptoms of diabetes insipidus. The disadvantage, however, of provoking such effects as pallor, headache, palpitation and diarrhea are objectionable. Blumgart has suggested spraying the substance into the nose or applying it on cotton pledgets but unfortunately this is not always efficacious and is expensive.

The administration of dry powdered substance of the posterior lobe is efficacious, more convenient and much less expensive. This has been shown by a number of investigators. Each dose is weighed and dispensed by the pharmacist in the form of a "powder paper." Four doses a day are required. The patient unfolds the paper, rolls it up like a straw, inserts one end in the nostril and sniffs the powder.

Other interesting data are given concerning the pathogenesis of this disease.

NUTRITION

Dr. Wilbur has given an excellent review of recent work pertaining to vitamines. He also discusses dental caries.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Familial Macular Degeneration. Lieut.-Col. R. E. Wright, C.I.E., I.M., Superintendent, Government Ophthalmic Hospital, Madras. The British Journal of Ophthalmology, March, 1935.

Wright reports that macular degenerations have been met with from time to time during the past fifteen years in Madras in their routine fundus examination but due to the difficulty in obtaining accurate family histories, striking sibships were rarely forthcoming. However, in September, 1933, he was asked to examine the three sons of a station-master because of the fact that their vision was fast failing. There was one other child, a girl, who apparently had normal vision. The father was of mixed Indian and Portugese descent. His sons were aged fourteen, twelve and eleven years. All had defective visual acuity, a dull mentality and remarkable heads. The father said that neither he or his wife had anything wrong with their eyesight, nor had there been any consanguineous marriages or defective vision in earlier life, for at least two generations. His wife was of similar descent.

These children, formerly in one hospital, had received antispecific treatment. At other places they had been examined, they were considered non-syphilitic. Their blood had formerly been examined at reliable laboratories and the Wasserman reported negative. Night blindness was not present but the father had noted dullness and mental apathy, particularly in the oldest boy. The fundus changes which Wright had many times noted before he encountered this family did not resemble any known pathological state and he regarded them as cases of familial degenerations. The macular fundus changes has been described by such expressions as "beaten brass or silver," "coppery sheen," etc. Pictures are reproduced, front and lateral views of the heads of the three boys. The daughter, father and mother have a lateral view. Roentgenograms of the skulls of all the family are reproduced. The findings of a detailed examination in each eye of the three boys is given in the article. Blood examination of the three boys and the father showed a negative Wasserman.

A part of the closing paragraph of Wright's article is: "The chief features of interest in this group of retinal defectives were: the reported escape of the girl (as yet, however, only seven years of age), and the associated progressive mental deterioration and dolichocephaly. In August, 1934, I had another opportunity of examining the whole family. As the father said on the occasion of the previous visit, the girl (now aged eight years) had nothing wrong with the vision, nor had the mother. The eye grounds of father, mother and the girl were within normal limits. The girl, however, showed a concentric depression of the fields, the outline lying between the ten degrees and the twenty degrees circles with a three mm. white object at two metres. (The mother's fields were much fuller, extending beyond the twenty degree circle with a two mm. white object at two metres.) They showed two peaks at axes forty-five and one hundred thirty-five in the inferior quadrant, the peak in the left inferior temporal quadrant being symmetrical with that in the right inferior temporal quadrant and reaching to the forty degree circle in the form of a blunt cone. The inferior nasal peaks were similar, but only reached the thirty-five degree circle. The girl did not appear to have a narrow, elongated skull and the father seemed to be a square-headed individual, but the head of the mother was obviously of the long, narrow type. The actual conditions are shown in the reduced x-ray positives and in the anthropometric figures. The girl's measurements are not very different from those of the youngest boy. The girl is to report next year for further examination."

Allergic Rhinitis. L. W. Dean, M.D., J. J. Bronfenbrenner, Ph.D., Dr.P.H., H. L. Alexander, M.D., F. K. Hansel, M.D., A. W. Proetz, M.D., A. M. Alden, M.D., W. F. Wenner, M.D., H. M. Smit, M.D., C. C. Bunch, Ph.D., B. J. McMahon, M.D., J. H. Alexander, A.B., A. D. Linton, B.S. Annals of Otology, Rhinology and Laryngology, March, 1936.

This is a symposium on allergic rhinitis which took place before the Midwestern Section of the American Laryngological, Rhinological and Otological Society, Inc., in St. Louis, January 15, 1936. Each of the above mentioned are considered an authority in the particular line of work that they are doing. J. J. Bronfenbrenner presented a paper entitled "Allergy from the Immunologist's Point of View;" Dr. Alexander, "Skin Tests in Allergy;" Dr. Hansel, "Surgical Treatment of the Nose in Allergy;" Dr. Proetz, "Treatment of the Acute Attack

of Allergic Rhinitis;" Dr. Alden, "Iontophoresis in Allergic Rhinitis;" Dr. Wenner, "Studies on Zinc Iontophoresis;" Dr. Smit, "Tissue Changes in Iontophoresis;" Dr. Bunch, "The Principles of the Electric Current in Iontophoresis;" Dr. McMahon, "Late Changes in the Mucosa of the Frontal Sinuses and Nose of Dogs Following Ionization;" J. H. Alexander, "Passive Transfer Relation of the Reagin Content of the Blood to Iontophoresis;" and Mr. Linton about "Intramucosal Tests Before and After Iontophoresis." The article is about sixty-eight pages in length. Numerous microphotographs and tables accompany the article. The publication appears to be a sincere attempt on the part of a group of recognized, competent men to evaluate the facts in regard to this controversial subject. The Panel Discussion was under the direction of the Chairman, Dr. L. W. Dean who is also editor of the journal from which this article is taken. His summary of closing remarks on the entire symposium are given below

By Dr. L. W. Dean: The original work that has been reported by the members of the department of ear, nose and throat in this discussion represents about fifty per cent of the research work on allergic rhinitis in the Departmet of Otolaryngology. The results of the remaining investigations will soon be reported.

This discussion has emphasized certain clinical phases of allergic rhinitis. The diagnosis of the nasal condition is an essential thing. Miss Zelma Alvis, working in our service, has shown that individuals having no symptoms of allergy do give positive skin tests. Many have an increased number of eosinophiles in the nasal discharge. Sometimes there is an increase in the eosinophiles of the blood. These observations will soon be reported, together with the explanation of the findings. If one of these persons had suffered from chronic intumescent rhinitis with acute exacerbations, it is easy to conceive that an erroneous diagnosis of allergic rhinitis would be made. Again, individuals with known allergic conditions, as gastro-intestinal allergy, may have at times a chronic intumescent rhinitis with an acute exacerbation and the rhinitis is not necessarily allergic.

A person may sufer from ragweed hay fever. If examined during the winter we may find skin and mucosal sensitivity to the ragweed pollen, reagins in the blood stream and eosinophiles in the nasal discharge. If he has a blocked nose due to a chronic intumescent rhinitis, the latter is not necessarily allergic. It may have been caused by repeated attacks of seasonal allergic rhinitis. Nasal treatment of this condition during the winter will give a nice result until the ragweed pollen is again in the air. The nonallergic cases of chronic intumescent rhinitis do yield nicely to nasal treatment.

An understanding of a case of allergic rhinitis can only be secured after ten days of study. Skin tests should be made. Intramucosal tests are necessary in order to determine the sensitivity of the mucous membrane of the nose. Passive transfer should be done if mucosal tests are positive. In addition to this there should be a careful study made of the nose and nasal sinuses.

Dietary irregularities should be sought for. If dietary deficiencies are found the patient should be put on an optimum, well balanced diet. If because of food sensitivity essential foods are withheld, they should be replaced by things of equal value. Endocrine defects must not be overlooked. A careful bacteriologic examination is necessary. It is assumed that the examination will be preceded by a meticulous history.

The more complete an understanding we have of our patient the fewer the number of cases of severe allergic rhinitis which will be cured by nasal treatment.

As brought out in this discusion, if a person is an outstanding allergic individual, as evidenced by the presence of PLUS FOUR reagins in the blood stream, there will be no improvement or very little improvement from any type of nasal treatment. The only benefit to be secured is that there may be a slight decrease in the obstruction accompanying the acute allergic reaction.

It has been evidenced in this discussion that treatment of allergic rhinitis is the avoidance of allergens, desensitization and nasal treatment. In addition to these things, the diet should be properly supervised, proper hygienic measures instituted and endocrine dyscrasias, if present, treated.

It is difficult to undertsand how one could apply a nasal treatment in an individual that has a normal nasal mucosa preceding the attack of acute allergic rhinitis. The moment, however, that we have a pathologic nose the problem becomes a different one.

Adenoids, deflected septa, exostoses, chronic purulent sinusitis, if present, should be given attention. The most important nasal condition from the clinical standpoint is a chronic intumescent rhinitis. When present the nose becomes easily blocked, either by a mild allergic rhinitis, a common cold, exposure to drafts or even by sleeping in a recumbent position. The patient often states that the side of his nose on which he lies is blocked. Chronic intumescent rhinitis is caused by acute attacks of allergic rhinitis, by repeated attacks of common cold, by irritating gases, dusts, etc.

It is this condition which is so beneficially affected by iontophoresis. Iontophoresis will shrink the moist, boggy mucosa of the nose and leave a membrane which is thinner and dryer. If a patient with chronic intumescent rhinitis has one side of the nose treated by iontophoresis and several weeks later develops a common cold the treated side remains dry; the mucous membrane is pale; there is no nasal obstruction. The untreated side is blocked, reddened and has the usual abundant watery discharge. Iontophoresis will produce a thinning and dryness of the normal mucosa. It benefits the patient by interfering with the swelling of the membrane during an attack of allergic rhinitis, common cold, when lying down, sitting in a draft, etc.

The influence of iontophoresis on the tissues of the nose, including the end organs of the parasympathetic system, have been described. It is most unlikely that iontophoresis has any effect on the allergic reactions of the tissues themselves. Because of the changes in the tissues some of the disturbing features of acute allergic rhinitis are lost. The ability of the nasal mucosa to absorb inhaled pollens seems to be disturbed. At any rate, contact application of pollen to the nasal mucosa usually does not produce as much reaction after iontophoresis as before, particularly in patients whose hay fever is benefitted by iontophoresis. The normal nasal mucous membrane does absorb pollens; the treated membrane is more like the skin and resists the entrance of the pollens into the tissues.

There is no evidence whatsoever that iontophoresis influences the allergic status of the nasal mucosa or of the organism as a whole. The reactions of the nasal mucosa to the intramucosal tests are not changed except that the membrane does not swell so much.

Persons who have been treated by iontophoresis for over a year and have gone through a siege of hay fever do not have a return of the edema of the tissue. In nonallergic rhinitis the results of the iontophoresis are more permanent.

Nine months ago we reported the following iontophoresis of three patients, in two instances the blurring of the maxillary sinus was improved, while in the third there was no change. It is probable that the decrease in the thickening of the lining membrane was a coincidence. We have not been able to confirm this observation in cases studied later. The lining of the maxiliary sinus of a guinea pig, taken eight days after iontophoresis, showed no change. An ethmoid cell in the middle turbinate, studied three months after iontophoresis of the nose showed no change. On the other hand, the one case of ozena that appeared after this treatment had a typical foreign body odor. Washing a little debris out of the maxillary sinus permanently controlled this condition.

In chronic intumescent rhinitis one can often secure just as good a clinical result as by iontophoresis by using procedures that do not cause the deleterious results that we get with iontophoresis. The chronic intumescent membrane may be made quite normal by the avoidance of offending allergens, by desensitization, by the removal of adenoids or by proper diet combined with the use of a vaccine. Patients who have suffered from nasal stoppage for ten years have secured complete relief by the avoidance of allergens, and the nasal mucosa has returned to an almost normal condition. One patient who suffered from a nasal stoppage had a bilateral Caldwell-Luc operation performed several years ago without benefit; later the patient was treated by iontophoresis, without improvement, but did secure relief from the administration of a proper diet plus vaccine and toxic filtrates.

It is axiomatic that iontophoresis should be used only after it has been proven that a satisfactory result cannot be secured by more simple procedure.

The treatment of acute allergic rhinitis is, first, the avoidance of allergens and desensitization. If a co-existent chronic intumescent rhinitis cannot be controlled by simpler procedures we should be certain that the beneficial effects of iontophoresis will outweigh its deleterious action.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Treatment of Senile Vaginitis with Estrogenic Hormones. By Adolph Jacoby and Benjamin Rabbiner. From the American Journal of Obstetrics and Gynecology, April, 1936, Page 654.

This is a report upon the results from treatment of twenty-five cases of senile vaginitis by the administration of estrogenic preparations.

It has been shown that the estrogenic substances produce a cyclical change in the vaginal mucosa even after the menopause.

The chief complaints in these patients were a varying amount of whitish, rather thin vaginal discharge with itching and a burning sensation in the external genitalia and vagina. Discharge was present in twenty-one of the patients, itching in eighteen, and burning sensation in thirteen.

The vagina and the portio in every instance showed numerous small ulcerations, varying in size from a few millimeters to half a centimeter, stippling the mucosa. The rest of the mucosa showing varying degrees of atrophy.

The treatment consisted of the administration of estrogenic substances by mouth and by intramuscular injection. The medication by mouth was prescribed three times daily and the injections were given once weekly intramuscularly. The average time under treatment was three and one-half months. No douches or other treatments were combined with the use of the estrogenic hormones.

The eleven patients who were cured had a complete disappearance of all symptoms as well as the restoration of the mucosa to normal appearance. All but one of the remaining patients were relieved of distressing itching, burning and discharge. Relapses occurred in twelve patients from one to five times within a week to five weeks after discontinuing treatment. Renewed improvement followed resumption of the treatment.

The authors draw the following conclusion:

"From the results of treatment of senile vaginitis with these substances, it is evident that the shedding and reformation of the mucosa eliminates the underlying pathology present in vaginitis. The normal mucosa thus produced is better able to resist those factors, whether of infectious or atrophic character, which cause the vaginitis. In this way a cure is brought about.

Even when a cure is not complete, the relief of symptoms justifies the use of estrogenic substances in the treatment of senile vaginitis."

COMMENTS: A similar study to the present one was conducted by Dr. Davis at the Chicago Lying In Hospital over a year ago. In his work, he demonstrated by punch biopsy of the vaginal mucosa both before and after treatment that the thin senile mucosa became thick and stratified as the treatment progressed.

Clinically this treatment is effective in a large percentage of the patients with senile vaginitis. It, however, suffers the inconvenience that treatment in most cases must be continued or the symptoms will recur and preparations by mouth alone are not effective.

Applicable in this situation as well as in the treatment of gonorrheal vaginitis in children, the observation of TeLinde is important. He found that the mucosa in children responded as well to treatment by vaginal suppositories as by intramuscular injection in oil. It therefore seems logical to employ the vaginal route of application of treatment in the senile vaginitis cases as well as in children.

It is also well to remember that numerous means of therapy have been devised for the treatment of this very troublesome condition. Many have been found to be effective only to discover that the benefits were temporary. Wendell Long.

Evisceration Following Abdominal Operations. By Ralph B. Bettman and Gemma M. Lichtenstein. From Archives of Surgery, April, 1936.

The occurence of evisceration following laparotomy seems to be unpredictable. The uncertainty of this infrequent complication is its chief terror. The authors made a survey of the cases occuring in Michael Reese Hospital during the past ten years and analyzed those factors which seemed of importance to them without, however, being able to reach any definite conclusion.

In 1931 Sokolov analyzed the largest series that has been reported. This series included seven hundred thirty-two cases collected from clinics in Europe and America. He found that almost twice

as many men were eviscerated as women and that the highest incidence was in the first six months of the year, which he thought was due to a lowering of the vitamin C content of the body. He felt that incisions in the upper part of the abdomen ruptured more frequently than did incisions in the lower part, that the greatest number of ruptures were in cases of malignant disease and that operations on the stomach headed the list of types of operations after which evisceration occurred. He stated that evisceration occurs after from two to three per cent of all laparotomies. He found that the maximum number of eviscerations occurred between the seventh and the tenth day post-operatively and that the largest number occurred in patients between the ages of thirty and sixty. The mortality in his series was 32.1 per cent in cases in which resuturing was done and 35.5 per cent in cases in which it was not done.

Meleney and Howes (Annals of Surgery, January, 1934), found that only from one to two per cent of the abdominal operations performed at the Presbyterian Hospital in New York were followed by evisceration. They agreed with Sokolov as to the post-operative period in which most ruptures occurred. They found evisceration most common after vertical incision in the upper abdomen and especially frequent after operations on the gallbladder and gastro-enterostomies and they expressed a belief that the major causes are cough infection and gastric lavage. Their mortality rate was forty-four per cent of all eviscerations.

Colp (Annals of Surgery, January, 1934), expressed the belief that the underlying lesion is the important factor in evisceration.

Grace (Annals of Surgery, January, 1934), also found the largest number of eviscerations after operation in the upper part of the abdomen. He found the mortality lower in those patients in whom evisceration occurred before the fifth day post-operatively than in those in whom it occurred later.

Baldwin (American Journal of Surgery, July, 1934), noted that he had observed no evisceration since he began leaving sutures in place for fourteen days and keeping patients in the hospital for three weeks.

The authors of this article found thirty-two cases of evisceration occurring in the Michael Reese Hospital in the past ten years. During this time 12,445 laparotomies were performed. This number included 5,262 appendectomies, most of which were done with the McBurney incision, one which many authors feel is not conducive to evisceration. For this reason they subtracted the appendectomies from the total number of laparotomies, leaving approximately 7,500 operations exclusive of McBurney incisions. This would give them an incidence of forty-three per cent eviscerations. The mortality rate after evisceration was 37.5 per cent. They found twice as many cases in women as in men, but, as many more women are operated on than men, the sex of the patient apparently played no role. They found evisceration occurring most frequently after operations on the lower part of the abdomen rather than the upper part of the abdomen. They also found evisceration more common from the mid-line incision than from the other kinds of incision and after hystrectomy than after any other type of operation. There were six cases of malignant disease in the group. The eventration occurred most frequently between the sixth and ninth post-operative days. They did not feel that the method of wound closure or the length of time that sutures were left in place was of any great significance. They did not believe that tension sutures apparently played any great part in preventing evisceration. They thought that complications, such as coughing, vomiting, wound infection and frequent gastric lavage were of relatively little importance. They were struck with the sporadic occurence of their cases of evisceration and their definite grouping at certain irregular intervals. This was also noticed by Maes and his associates (Annals of Surgery, November, 1934). This grouping of eviscerations, they thought, was not explicable on the basis of epidemics of grip, bronchial pneumonia or other infections. They thought that no change in operating room technique could be held accountable. They thought that the brand of catgut used could not be held accountable. The incidence of eviscerations in their series did not seem to run parallel with that of apparently poorly healing wounds.

LeRoy D. Long.

The End Results of Thyroidectomy in Four Hundred Thirty-Six Cases of Exophthalmic Goiter. By Arnold S. Jackson. From Transactions of the Western Surgical Association for 1934.

The purpose of this paper was to show that subtotal thyroidectomy is still the most satisfactory method of curing exophthalmic goiter. The word "cure" was used with reservation, it being recognized that the disease may recur regardless of the type of treatment used.

Due to the tendency to recurrence and because of the high mortality following thyroidectomy previous to 1921 (in the so-called pre-Lugol era) many other methods of treatment have been advised such as long continued bed rest, different kinds of medicinal therapy, serum injections, radiation, etc.

The conclusions which were reached by the author were as follows:

A study of four hundred thirty-six cases of exophthalmic goiter in which a subtotal thyroidectomy was performed in one or more stages during the years 1922-1929 inclusive, was presented.

An analysis of the three hundred nine cases traced to date showed 89.5 per cent of the patients are cured, 9.5 per cent improved, and one per cent show some evidence of hyperthyroidism. Thus ninety-nine per cent are either cured or improved, an average of eight and one-half years following operation.

Eighty-eight per cent of the patients are able to perform their regular duties and twelve per cent are performing partial duties.

One hundred sixty of the three hundred nine patients were given a complete physical examination in November, 1934. The data in the other one hundred forty-nine cases was obtained by questionnaire letters. The end results obtained in a study of the two groups are essentially the same. The number of cures was slightly increased in those given a physical examination because a few had interpreted menopausal symptoms as a persistent or recurrence of hyperthyroidism.

Of the three hundred nine patients two hundred fifty-three were cured by one complete thyroidectomy—that is, one or more stages, twenty-two were improved; thirty had a second thyroidectomy, either before or after coming to Jackson Clinic. All of these are now either cured or improved by a second operation. One patient had three thyroidectomies before coming to the Jackson Clinic for her fourth. Two patients were operated upon three times at the clinic. All have now remained well five years or more. In several of these cases the patients stated that their own activities were responsible for the recurrence of symptoms.

With ninety-nine per cent of the patients either

cured or improved eight and one-half years following thyroidectomy further evidence is presented to substantiate the claim that subtotal thyroidectomy is the most satisfactory method known to cure exophthalmic goiter.

The fallacy of gradually reducing the basal metabolism to normal by rest, medication, x-ray and radium, rather than by prompt surgical intervention following proper pre-operative preparation is pointed out. Procrastination of operative treatment in hyperthyroidism results in permanent damage to the cardio-vascular renal system.

To resort to denervation of the adrenal glands to cure exophthalmic goiter seems unnecessary and possibly an unwarranted procedure.

The use of iodine, pre-operatively and post-operatively, the metabolic laboratory, team work, cervical nerve block anesthesia, and the electro-surgical knife have simplified the operation, lowered mortality, reduced recurrences, and increased the number of cures.

A preliminary report was presented of one hundred cases of exophthalmic goiter in which a subtotal resection of the thyroid gland was performed with the electro-surgical knife with but 1.5 per cent of the cases showing evidence of recurrence as against a five per cent recurrence with the scalpel.

COMMENT: Dr. Jackson has obtained marvelously good results. Such a report from a man of his caliber is of great value. No other form of treatment known or suggested could present results like this. At the present time there can be no question that subtotal thyroidectomy is the most satisfactory method of curing exophthalmic goiter.

LeRoy D. Long.

Perforated Ulcer of Stomach: Diagnosis and Treatment. (Ulcere Perfore de l'Estomac: Diagnostic et Traitement). By Antonio Bellerose. F. R. C. S. (Canada). Chirurgien de l' Hopital Notre Dame, Montreal. L'Union Medicale du Canada, April, 1936.

This article is a brief and definite summary of the facts touching the symptoms, signs and treatment of perforated gastric ulcer.

In general, these symptoms and signs are: A sudden violent pain above the umbilicus (douleur en coup de poignard sus ombilical) with an invincible contraction of that portion of the abdominal wall. If there is a history of preceding symptoms suggestive of ulcer of stomach, there can be little doubt about the diagnosis.

The sudden violent pain is practically always in the epigastrium at first. After the lapse of some time it extends into other parts of the abdomen.

The contraction of the muscles is so marked that the outlines of the recti may be seen in thin subjects. Palpation always reveals the intense muscular contraction, the maximum being in epigastric area.

Respiration is thoracic in type.

In ninety per cent of patients there is a history of gastric disturbances, like pain some time after meals, vomiting, occasionally hematemasis. In ten per cent the history of previous disturbances is vague or absent.

Other signs of importance are disappearance of liver dullness and the radioscopic revelation of gas between liver and diaphragm.

The treatment advised is a simple suture of the perforation, with drainage of the gastro-hepatic area, and, in late cases, of the lower abdomen or pelvis.

Attention is directed to the all-important fact that the surgical treatment of a perforated gastric ulcer is an emergency operation ("une operation d urgence"), and that the prime necessity is closure of the perforation, without gastro-enterostomy or any other additional operation.

The prognosis bears a very distinct relation to the time the perforation has existed before operation. It has been established by bacteriological examinations of the exudate that virulent pathogenic bacteria are practically never present within the first six hours, and if simple suture is done during that time the immediate results are nearly always good, and in the case of many patients there is no further difficulty, provided there is sensible and wise discretion in connection with food and habits.

Bellerose reports nine cases which are illustrative of his position relative to treatment as well as of the clinical picture before operation.

COMMENTS: In connection with the symptoms and signs of perforation of a gastric or duodenal ulcer, the graphic formula of Moynihan should be remembered: "Sudden agonizing pain that does not abate, a board-like abdomen, shallow respiration, an anxious countenance."

It might not be out of place to say a word about one of the details of operation. As a rule, one would do better not to employ a purse-string suture for closing a perforation, and this is particularly true if the margins are firm. By and large, we believe that the uniform employment of through-and-through sutures, either interrupted or continuous, is much better, and there should be sufficient "bite" so that they wil not cut through in handling and tying. LeRoy Long.

Reticulo-Plasmocytomata in Sacro-Iliac Region (Reticulo-Plasmocytomes Ilio-Sacres). By L. Sabodini, J. Montpellier and M. Chechan. LaPresse Medicale, March 28, 1936.

Referring to the history of the development of information about tumors arising from medullary tissue, first described by Rustizky, in the clinic of Recklinghausen, Strasbourg 1873, the authors indicate what seems to be the general belief that the variety of names, such as "myeloma," "recticulo-sarcoma," "reticulo-endothelioma," "myeloblastoma," et cetera, is probably explained by the fact that different investigators have examined sections of what was at first the same kind of tumor but in diferent stages of propagation.

The type called "plasmocytoma" was first described by Wright, of Boston in 1900.

A case is reported, the principal points being as follows: An indigent man entered hospital because of pain in legs, especially the left one; of weakuess and loss of weight.

The walk was difficult. There was a cachectic appearance.

There had been an illness of around six months. At first there was cough, fever, weakness, it being necessary to go to bed.

Pain in the legs began some three months later.

There was a tumefaction about the size of a hen's egg in left sacro-iliac region. It was soft and a little mobile transversely. Radiographic examination disclosed extensive decalcification about sacro-iliac region.

There was a diagnosis of "sacro-coxalgia," and this was followed by an operation when a mass was found in relation with joint. A pathological examination revealed characteristic picture of plasmocytoma.

COMMENTS: One ought to be anxiously sus-

picious in the presence of severe pain in connection with the skeletal structures, associated with emaciation and weakness. If there is not a satisfactory explanation, malignant tumor arising from the bone marrow is always a distinct possibility. While plasmocytomata, although closely related to the lymphoblastomata, may be benign, the diffuse types arising from the bone marrow may be malignant, forming one class of the myelomata (see statement by Francis Carter Wood, page 56, Vol. II, Nelson Loose Leaf Living Surgery).

But plasmocytoma is a very rare type of tumor, and for that reason one ought to think always of multiple myelomata which may appear simultaneously in many bones, "possibly due to a general affection of the bone marrow" (Wood).

LeRoy Long.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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End Results of Leg Lengthening. G. Bruce Stephenson and Herbert A. Durham. Southern Medical Journal, XXVII, 818, September, 1935.

This report is based on seventeen cases. In two cases, lengthening of the femur was done, and in fifteen cases lengthening of the tibia and fibula was carried out. In each case, the shortening was the result of poliomyelitis. None of the patients was under twelve years of age.

The technic and the apparatus are described in detail. With the type of apparatus used, frequent roentgenograms are not necessary; thus the danger of delayed union is avoided. The time required for lengthening is fifteen to twenty-five days. The lengthening apparatus is left on for from four to five weeks. A cast is then applied, followed by the use of a walking caliper.

In each case solid union was obtained in six to eight months. The minimum tibial lengthening was one and three-fourths inches; the maximum, two and three-fourths inches. One femur was lengthened two and three-fourths inches; the other, three and one-fourth inches.

Osteo-arthritis of the Hip Joint. T. P. McMurray. British Journal Surgery, XXII, 716, 1935.

Such great ingenuity has been shown in the classification of osteo-arthritis of the hip joint that, in many of the classifications, it is almost impossible to recognize what is after all a very common condition. The classification generally accepted is the simplest of all, the infective or toxic type, and the traumatic type.

In a study of eighty-nine cases, the author reports that the average age of onset for the bilateral cases was fifty-three years; in the unilateral group, it was thirty-four years. A large proportion of the unilateral cases were preceded by injury to the hip.

The roentgenographic appearance is usually typical, with a loss of joint space, atrophy of the bones and a rim of osteophytic outgrowths lying around the articular margins of the acetabulum. In unilateral cases, there is usually some distinct alteration in the shape of the head of the femur, while in the bilateral cases the head remains normal in shape.

In toxic or infective arthritis there is the problem of generalized infection, while in arthritis of one hip, whether there be an infectious process present or not it is probable that trauma or an alteration in the joint mechanism was the exciting cause, and the fear of spread of the condition is not present to the same extent.

The different methods of treatment are considered in detail and the author comes to the following conclusion: Manipulation may produce a relief of symptoms and increase movement temporarily. Arthroplasty is the ideal operation, but at present our methods and techniques fail to secure any real benefit for the patient and the operation is a failure. Arthrodesis removes the pain and deformity and greatly increases the stability of the joint, but it is a very extensive procedure and if unsuccessful results in a great increase of strain on the lumbar spine and sacro-iliac region. The bifurcation operation of Lorenz is simple, of short duration, and, if performed correctly, leads to relief of pain and deformity with no loss of stability and does not cause strain on the lumbar regions.

The Etiology of Chronic Arthritis. Chester S. Keefer. New England Medical Journal CCXIII, 644, 1935.

The author classifies arthritis as follows: degenerative arthritis, commonly called osteo-arthritis or hypertrophic arthritis; and rheumatoid arthritis, commonly called infectious or atrophic arthritis.

Although the actual etiology of the arthritides is unknown, the author offers the following as the most likely theories.

Degenerative arthritis is due to injuries, excessive wear and tear, or trauma to the articular surfaces. There are three possible theories in regard to the etiology or rheumatoid arthritis.

1. The unitarian theory in which both the rheumatoid and degenerative types are thought to be due to the same etiological agent or groups of agents. The factors which determine the type of arthritis are trauma, focal infections, menopause changes, and habits of the patients. This is thought to be true by many authorities, as there are so many mixed types of arthritis pathologically.

2. Infectious theory. This is thought possible because of the inflammatory symptoms and the fact that there are often found positive agglutination and precipitation reactions to hemolytic streptococci. This theory has also three possibilities within itself: (a) metastasis from a focal infection; (b) toxins absorbed from a focus of infection; (c) reactions of bacteria or their end products on some sensitized tissue.

3. The eclectic theory in which there is considered an imbalance of the nervous, gastro-intestinal and peripheral nervous systems. Gastro-intestinal disorders are commonly found with a decreased acidity, but the author does not feel that there is any definitely convincing etiological background connected with it. Very seldom does one find vascular changes in a synovium in the joints. There is rarely any connection between Raynaud's disease or scleroderma and rheumatoid arthritis. The author does not believe that there are any results obtained by sympathectomy.

In conclusion, the writer states that, although there are no definite etiological facts, there will be a better understanding of the etiology as soon as there is a better understanding of the typing of the disease.

Dislocations of Knee Joint: Report of Complete External Lateral Dislocation

H. Earle Conwell and R. H. Alldredge, Fairfield, Ala. (Journal A. M. A., Aprill 11, 1936), point out that in a total number of about 9,000 fractures and dislocations treated by the orthopedic service of the Employees Hospital, there were six cases of complete dislocation of the knee joint. In four of these cases the knee was dislocated anteriorly, in one case it was dislocated posteriorly and the sixth case was an external lateral dislocation of the knee joint, which is reported in detail. It is their opinion that dislocations of the knee should be treated conservatively; that is, by closed reduction and prolonged immobilization. They also believe that development of the muscles, especially the quadriceps, is of supreme importance, since they have a great deal to do with stabilizing the knee. The etiology, types, classification, anatomy, pathologic disorders, diagnosis, treatment and prognosis of dislocations of the knee joint are discussed.

Treatment of Pernicious Anemia With Autolyzed Liver Concentrate

Theodore G. Klumpp, New Haven, Conn. (Journal A. M. A., Aprill 11, 1936), studied the therapeutic potency of autolyzed liver concentrate-Squibb for a period of two years in the wards and in the hematology clinics of the New Haven Hospital. He found that autolyzed liver concentrate is effective in the initial and maintenance treatment of addisonian anemia. Autolyzed liver concentrate is more potent than liver extract-Lilly derived from the same amounts of liver. In the intial treatment of pernicious anemia, maximal effects have been obtained from a daily dose of autolyzed liver concentrate derived from between one hundred fifty and two hundred Gm. of liver. For maintenance treatment a dose of from one to eight teaspoonfuls daily, on the average three teaspoonfuls, has been found adequate

Anterior Pituitary-Like Hormone: Clinical Study of Its Effects on Acne Vulgaris

In an earlier paper, Feigenbaum and the author reported the results of treatment of fifteen patients with acne by injection of antuitrin-S. Charles H. Lawrence's, Boston (Journal A. M. A., March 21, 1936), present paper comprises a study of thirty patients by the same method, and a discussion of the results obtained. So far as they parallel those of authors previously cited, his observations are in essential agreement with them. Three-fourths of the patients were between ten and twenty years of age, and in the remaining fourth the acne had appeared during adolescence in all but two, in both of whom it was preceded by changes in the rhythm and character of the catamenia. The onset of the eruption was between the twelfth and fourteenth year in more than two thirds of the patients, and in only one did it appear as early as the tenth year. Its severity was rated as mild in five patients, moderate in thirteen and severe in twelve. The eruption was confined to the face in fifteen cases,, to the face and neck in two, and in thirteen was distributed over the face, neck, chest and back. Ten of our patients were males, twenty were females. In the latter group a definite history of an exacerbation of the eruption at the menstrual period was obtained in eight patients; eleven had never noted any such relation, and one stated positively that it did not exist. The menstrual periods were normal in only six of the twenty females. Treatment consisted, as in the earlier series, of injections of two cc. of antuitrin-S every other day. Injections were omitted during the menstrual period of the female patients, though in no instance has there been noted any effect on normal menstruation, despite the well known influence of the preparation in disturbances of that function. In the patients in whom there was coexisting menstrual disturbance, improvement in both acne and menstruation progressed in equal measure, indicating a general effect on bodily economy rather than one localized in the skin. The duration and amount of treatment necessary to produce results varied greatly in different patients. The factors which determined the variation were apparently the age of the patient and the severity of the disease, but even in patients of identical age and equally severe eruptions a rather wide variation of response occurred. The average dosage in the series has been 3,360 rat units, the maximum 7,700 rat units, in a patient fifteen years of age with severe general acne, and the minimum 300 rat units, in a patient thirty years of age with a mild eruption confined to the face and neck. In the majority of patients, improvement has been apparent in from two to four weeks, and the maximal benefit has been obtained in from twelve to sixteen weeks. Two patients have shown slight relapses, beginning four and six weeks after treatment was stopped and responding promptly to the resumption of treatment. No difference is apparent between the two sexes as regards response to treatment. Ten patients are regarded as cured, since their acne has not reappeared after two months without treatment. Eleven are much improved, showing at present only an occasional papule, and seven show only moderate improvement, owing partly to as yet insufficient treatment and partly to slow response. One patient has moved away, and one has just begun treatment and was included in the series because of significant features in her case.

Prevalence of Vitamin A Deficiency Among Iowa Children

Using a test for ability to adapt to the dark as the means for detecting vitamin A adequacy, P. C. Jeans and Zelma Zentmire, Iowa City (Journal A. M. A., March 21, 1936), found that twenty-six per cent of a rural group and fifty-three of a village group of Iowa children presented evidence of vitamin A deficiency; in an urban group the proportion for the higher economic level was fifty-six per cent, for a middle level sixty-three per cent and for a low economic level seventy-nine per cent. Of the seventy-eight village and rural children who were deficient in vitamin A and who continued under observation, all except three developed normal dark adaptation after a period of vitamin A or carotene ingestion.

Rupture of Kidney Following Pyelography

Louis H. Baretz, Brooklyn (Journal A. M. A., March 21, 1936), warns that the capacity (normal from four to six cc.) of the renal pelvis must not be exceeded in pyelographic injection. Aspiration of the pelvis should be a routine procedure to determine the capacity. To perform pyelography on badly infected kidneys is a dangerous procedure. Whenever possible, in the presence of infection, acute or subacute, the pelvis should be visualized by the excretory route. If the retrograde method is essential, great care must be used. If there is no apparent pain or discomfort after from fifteen to twenty cc., the operator should cease and visualize the pyelogram before attempting an injection of a larger quantity of the medium. Surgery is usually indicated when the urography shows extensive extravasation. In three cases ruptured kidney followed the indiscreet use of the pyelogram.

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